

TigerAccess VoIP

Voice over Internet Protocol

- One Stage Dialing Supports up to 32 devices in each group
- 4/8 ports of FXS for interfacing a PBX
- Tie-trunk operation supports one stage dialing
- Embedded QoS feature improves end-to-end voice quality
- G.729A(8K) voice compression saves bandwidth
- Supports silence suppression/Voice Activity Detection and CNG
- Provides for system console, telnet and web browser management
- Call control protocol prevents the illegal intrusion

SMC TigerAccess VoIP SMC-VIP04 AND SMC-VIP08 PBX VoIP Gateway

User Manual

Edition 1.0

Table of Contents

1	SMC TIGERACCESS VOIP	6
2	BEFORE INSTALLING THIS PRODUCT	7
2.1	WHY PBX VOIP GATEWAY?.....	7
2.1.1	<i>Eliminate the barrier of a heterogeneous PBX system.....</i>	<i>7</i>
2.1.2	<i>Toll-Bypass advantage</i>	<i>7</i>
3	USING THE PBX VOIP GATEWAY.....	8
3.1	INTERNAL CALLS.....	8
4	QUICK INSTALLATION.....	9
4.1	QUICK START	9
4.2	BASIC TOPOLOGY	9
4.3	DEALING WITH A NAT ENVIRONMENT	12
4.4	UTILIZING THE QoS ADVANTAGE.....	14
4.4.1	<i>Connectors and LED Indicators</i>	<i>15</i>
4.5	CONFIGURING THE GATEWAY ID AND PASSWORD	18
4.5.1	<i>Using System Console.....</i>	<i>18</i>
4.6	IP CONFIGURATION.....	19
4.6.1	<i>User Assigned IP Address.....</i>	<i>20</i>
4.6.2	<i>Get the IP Address From a DHCP Server.....</i>	<i>21</i>
4.7	CONFIGURATION AS MASTER	23
4.8	SLAVES CONFIGURATION	25
5	BASIC CONFIGURATION.....	30
5.1	SYSTEM CONSOLE MODES.....	30
5.2	SYSTEM MANAGEMENT	30
5.2.1	<i>Information-Web Management.....</i>	<i>31</i>
5.2.2	<i>Console Commands -System Information</i>	<i>33</i>
5.2.3	<i>Registration-Web Interface</i>	<i>34</i>
5.2.4	<i>Registration Information- Console Interface.....</i>	<i>37</i>
5.2.5	<i>Configuration-Web Interface.....</i>	<i>37</i>
5.2.6	<i>Configuration Information- Console Interface</i>	<i>39</i>
5.2.7	<i>Numbering Plan-Web Interface.....</i>	<i>40</i>

5.2.8	Numbering Plan Information- Console Interface	41
5.2.9	International Code-Web Interface.....	42
5.2.10	International Code Information- Console Interface	43
5.2.11	Long Distance Code-Web Interface.....	44
5.2.12	Long Distance Code Information- Console Interface	44
5.2.13	Routing Table-Web Interface (No Function on SMC-VIP04 AND SMC-VIP08).....	46
5.2.14	Routing Table- Console Interface	47
5.2.15	Pin Code Assignment-Web Interface(No function on SMC-VIP08/SMC-VIP04).....	48
5.2.16	Pin Code Assignment- Console Interface.....	49
5.2.17	Topology-Web Interface	50
5.2.18	Topology- Console Interface	50
5.2.19	Route Search-Web Interface.....	51
5.2.20	Route Search- Console Interface.....	51
5.3	TCP/IP CONFIGURATION	52
5.4	CHANNEL MANAGEMENT	54
5.4.1	Summary	54
5.4.2	Regional	55
5.4.3	Channel Configuration	57
5.4.4	Statistics	60
5.5	MANAGEMENT INTERFACES	62
5.5.1	Web Management	62
5.5.2	Console Commands	65
5.6	SOFTWARE UPGRADE	66
5.6.1	Console Commands	68
5.7	ADDITIONAL CONSOLE COMMANDS	70
6	APPENDIX A - PHONE SET INTERFACE CONFIGURATION PROCEDURES	72
6.1	CONFIGURATION PROCEDURES.....	72
6.2	CONFIGURABLE ITEMS.....	72
6.2.1	Data Range	72
6.2.2	Configurable Items.....	73
7	APPENDIX A - FIREWALL CONFIGURATION	75
8	APPENDIX B - REGULATION COMPLIANCE INFORMATION & WARRANTY.....	76
8.1	FCC	76
8.2	76

8.3 WARRANTY 77

9 REGIONAL TONE ADJUSTMENT 79

1 SMC TigerAccess VoIP

The progression towards a converged network continues to push network administrators, vendors and corporations to better understand what convergence is and how it ultimately affects the user of such services. In a converged network the user uses the same tools even while voice communications is added to the IP network. This ensures familiarity, ease of use and a pleasing experience for the end-user.

SMC Networks, Inc., an industry leader in networking products, has created a comprehensive line of Voice over Internet Protocol products designed to: a) Provide the highest quality and experience in the VoIP market: b) Create a quick return on Investment (ROI) for corporations and other integrators.

SMC's TigerAccess VoIP class of products are designed for the small-to-medium or small-to-enterprise businesses. Featuring units with 1U rackmount or desktop designs make it easy for LAN designers to include them in the network. A plethora of management and configuration methods are available including Web-based, Telnet or Console management. Moreover, featuring patented firmware we ensure standards-based interoperability. SMC knows you'll enjoy your new VoIP infrastructure.

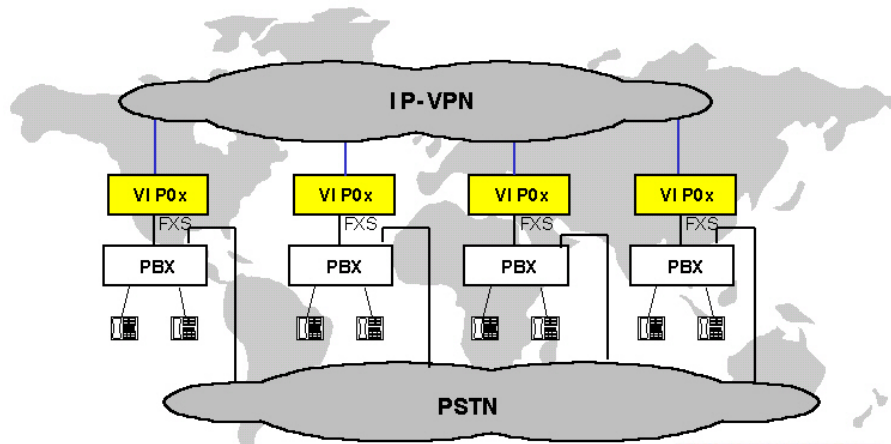
Thank you for purchasing SMC's TigerAccess VoIP products and please call us at 1-800-SMC-4YOU for both Service and Support.

Sincerely,
SMC Networks, Inc.

2 Before installing this product

This guide will explain how to configure the PBX VoIP gateway using the system console commands and web management interface. We strongly suggest installation candidates have technical networking background and PBX VoIP gateway experience. They must also have knowledge the fundamentals of VOIP.

2.1 Why PBX VoIP Gateway?



2.1.1 Eliminate the barrier of a heterogeneous PBX system

Multi-national enterprises with offices located in various national or international sites, find it hard to have a single PBX system for the whole group of offices. Demands on departmental services between offices, the size of some offices and various telecommunication regulations in different countries, make it difficult to use the same PBX system or even compatible PBX systems.

The SMC PBX VoIP gateway is designed to functions as the PBX tie trunk but interoperable with different PBX or KTS system.

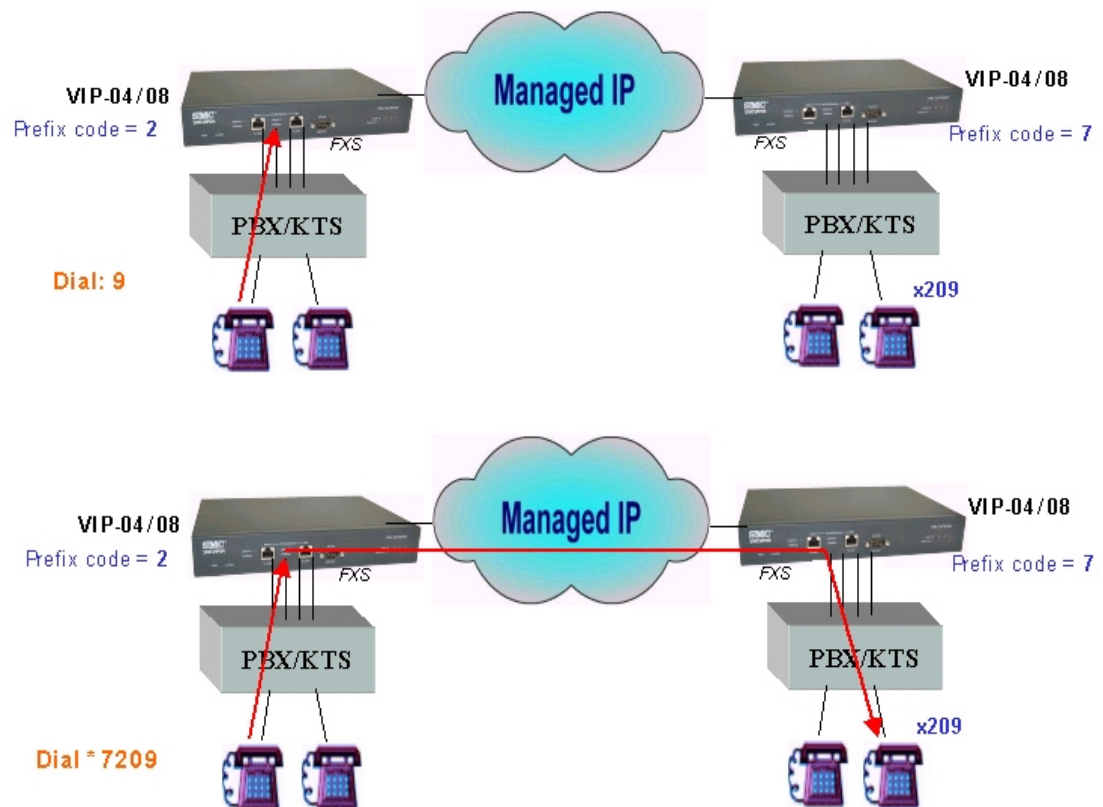
2.1.2 Toll-Bypass advantage

The SMC PBX VoIP gateway utilizes modern VoIP technology so one can have the toll-bypass advantage with flat rated data access fee. This helps save enormous expanse especially for large amount of communication hours between offices.

3 Using the PBX VoIP gateway

3.1 Internal Calls

The SMC TigerAccess VoIP (SMC-VIP04 and SMC-VIP08) gateway is designed to be the tie trunk of your PBX. When two or more PBXs are tied with the SMC VoIP gateway, the extension line on the remote PBX will perform as an extension of the local PBX (acting as if both locations were on a single PBX). The following example demonstrates how a user at the extension on the PBX VoIP gateway with prefix code "2" can dial "9" plus "*7209" to connect to extension 209 of the PBX that has PBX VoIP gateway with prefix "7".



4 Quick Installation

4.1 Quick Start

1. Plug in the Ethernet Cable, Null Modem cable and power on the device to begin the configuration.
2. Configure the IP Address, subnet mask, Default Gateway to make the device reachable from the network.
3. Configure the prefix of the device
4. Decide the role (Master or Slave) of the device and configure the Group ID
5. Add the MAC address of the Slave that are going to joint the group to Master.
6. Configure the IP address of Master gateway to Slave device
7. Restart the device to make the configuration take effect.

4.2 Basic Topology

Your new SMC PBX VoIP gateway is based on a master/slave architecture. This means that in your VoIP infrastructure setup, one unit will be the master, while the rest in the group are considered to be slaves. The master gateway is central since it is the focal point of all common information and control information within the same group.

- Each device will be identified with its own prefix number. This prefix is then put as an ID within the whole group.
- The master keeps a list of all the members of the group. While updating information for the whole group, it will poll each slave devices with routing information and group table. Base on this facility, when a new device joints into the group. It will get the whole group information from Master and other members in the group will be updated.
- A new slave needs to joint into the group via synchronizing the group information with master device. Before that, it **cannot** make phone calls to any devices.
- Since each slave maintains the member list locally, if the master is inoperable for any reason, the slaves can still communicate with each other. However, until the master is back online, the slaves are unable to get any updated new information.

The PBX VoIP gateway is designed to work over an IP network. Before it connects to an IP network, you must assign the Gateway an IP address. Like the regular settings of

an IP network, you also need to configure the subnet mask and the default gateway.

Defining a Master or Slave device begins after you've configured IP addresses.

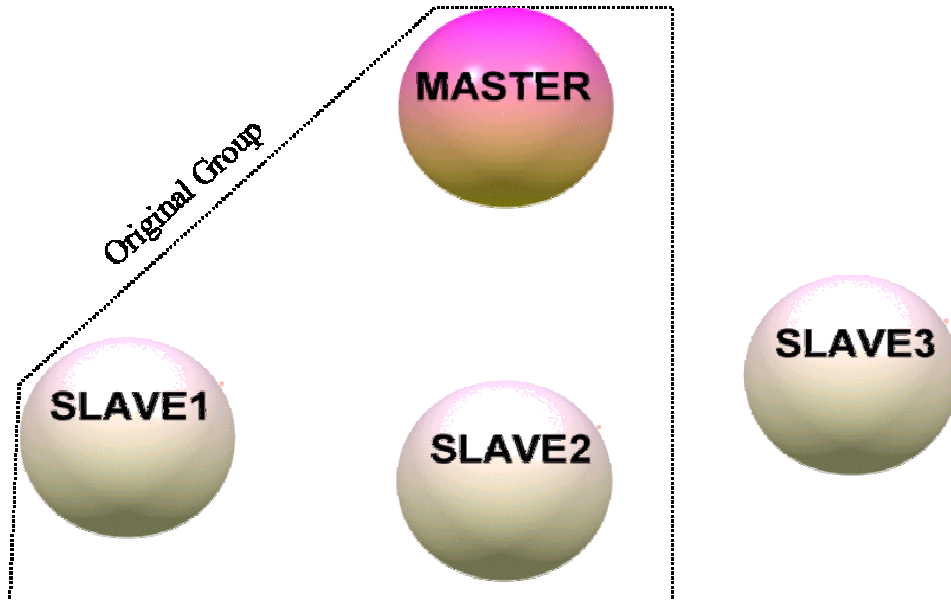


Fig 1 The Master is in charge of maintaining the member list

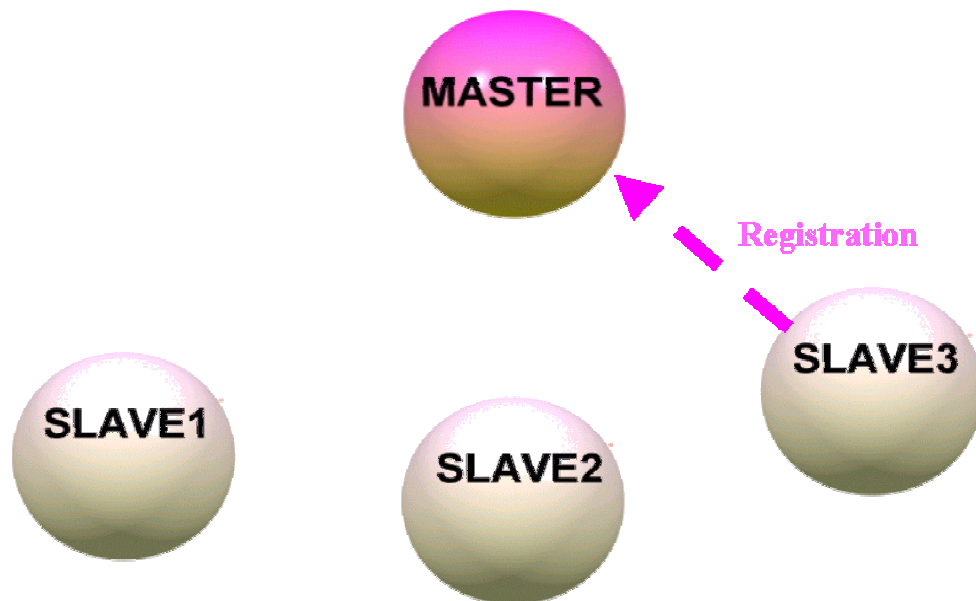


Fig 2 When a new Slave device registrar into the group

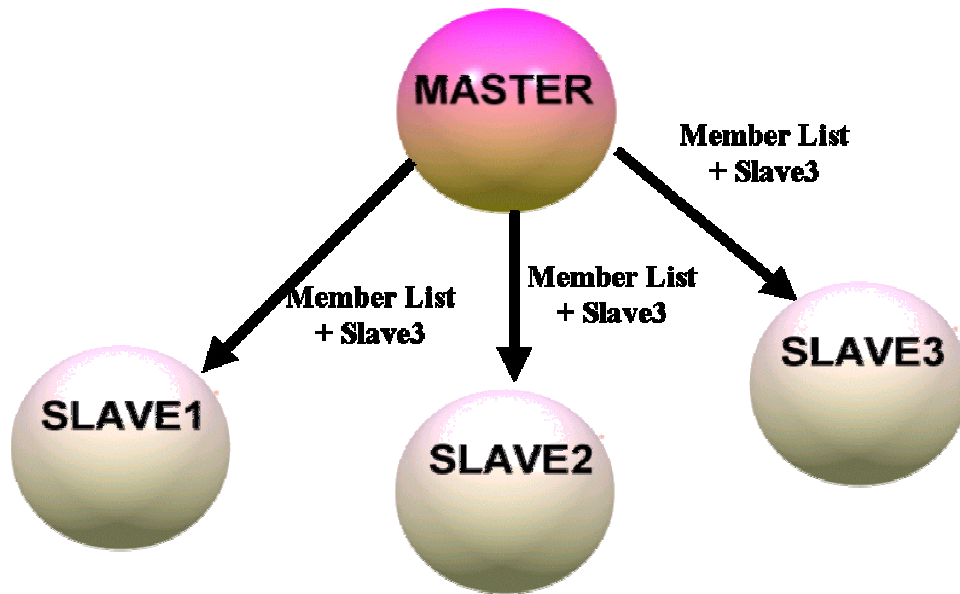


Fig 3 The Master updates the new member list and send it to every member

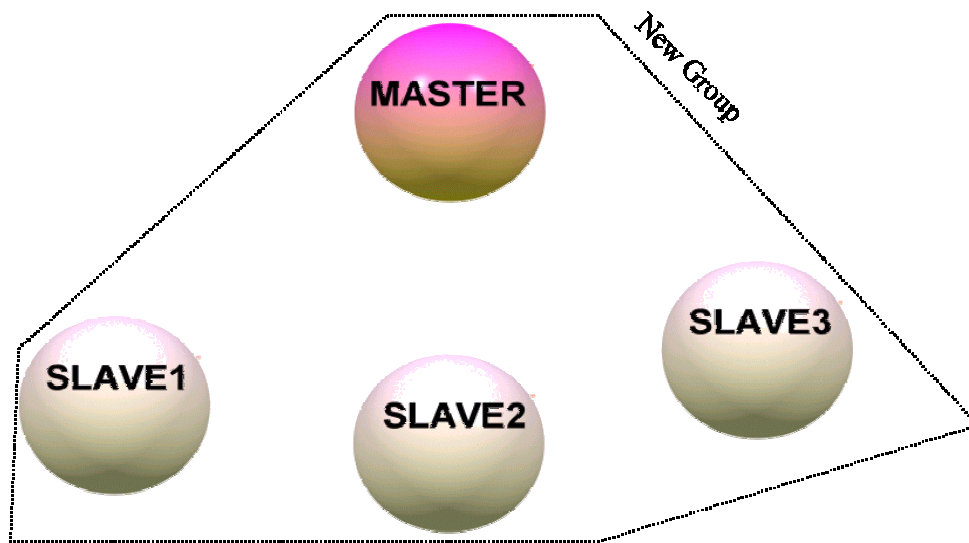


Fig 4 The Master will synchronize the member information with each members.

Fig 5 The Master will synchronize the member information with each members.

Device Role	MUST Parameters
Master	<ul style="list-style-type: none"> ■ Prefix ■ Group ID ■ MAC address of Slave devices
Slave	<ul style="list-style-type: none"> ■ Prefix ■ Group ID ■ IP address of Master Device

Note 1 If a slave has successfully joined a group, the RED Alarm LED will turn off.

4.3 Dealing with a NAT Environment

IP addresses are a limited resource and not all devices on the Internet can have its own public IP address. So to deal with this finite resource, Network Address Translation (NAT) was developed to change the IP header from the LAN packed back into a header address for the public IP address. Hence, your LAN devices can share a single public IP address as they pass through a router. Most VoIP devices cannot support NAT, since Network Address Translation Server only replaces the IP headers, while VoIP packets contain IP information within the data area of voice packet. Thereby replacing voice packets with a real IP header, but the data inside is still using the private IP address. SMC's TigerAccess VoIP however solves this issue.

SMC-VIP04 and SMC-VIP08 are able to use private IP addresses by applying Network Address Translation (NAT). Most of the time this is done without needing to configure the NAT server or even the SMC-VIP04/SMC-VIP08 itself. The only mandatory specification is that the Master device in the group be set with a public IP address.

Since there are so many NAT servers now in the markets, there is no standard to address how to develop an NAT server or how to test the interoperability of the NAT server with other applications. Therefore, some configuration may be needed to ensure the NAT server has the correct In-bound rules or Out-bound rules so NAT will be able to work with some special applications.

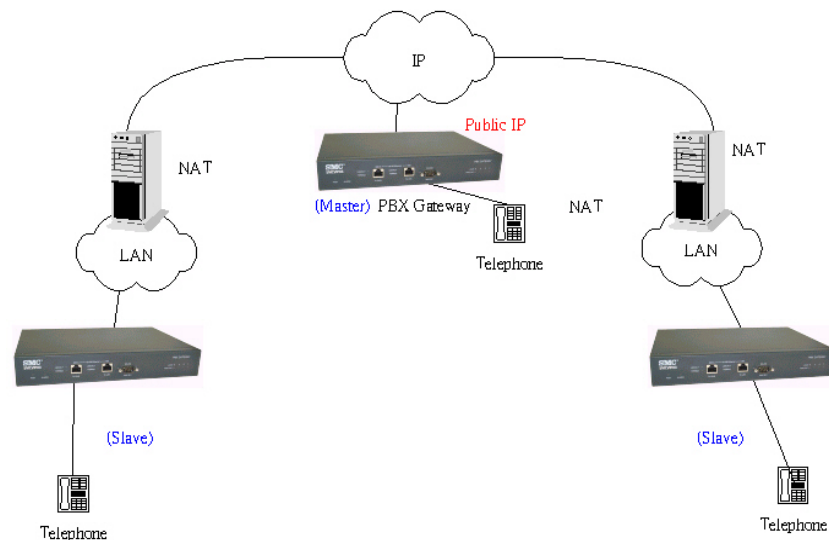


Fig 6 Support Voice over IP under NAT environment

- Only guaranteed for Tested NAT server or software
- Some NAT devices must specify the In-bound and Out-bound rules, but some of them do not need any configuration on NAT server, such as SMC's Barricade
- The Master VoIP device must have a public IP address
- Only one Slave device is allowed to be installed on one NAT domain with a private IP address, that means cascading the units to increase the density of channels by using private IP address will not be supported.
- Some In-bound or Out-bound address translation rules may time out on NAT server. So user may need to restart the TigerAccess VoIP voice gateway if that situation occurs.

4.4 Utilizing the QoS advantage

The TigerAccess VoIP voice gateway is equipped with QoS. This provides higher priority for voice than data over your LAN. To fully utilize this advanced feature, you need to install the device according to the following diagram to have voice sent out with a superior QoS than data from local area network. You can see the "To WAN" Ethernet port on the front panel is used to connect to the router. The "To LAN" Ethernet port that near RS-232 port on the front panel is used to connect to a Switch on the LAN. Thus voice can have higher priority than data when going out your WAN connection.

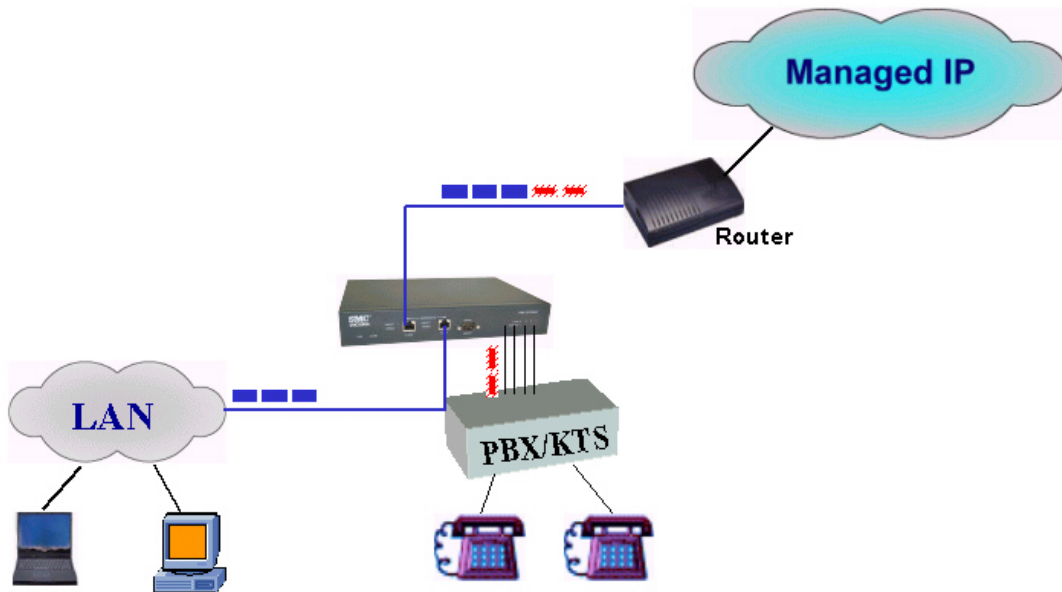


Fig 7 Diagram of utilizing Embedded QoS function

To maintain the QoS function while stacking the devices, you need to connect the LAN port of the primary PBX gateway (that connect to the router in Fig. 2) to the WAN port of the secondary PBX gateway. And the LAN port the secondary PBX gateway to the Switch on the local area network.

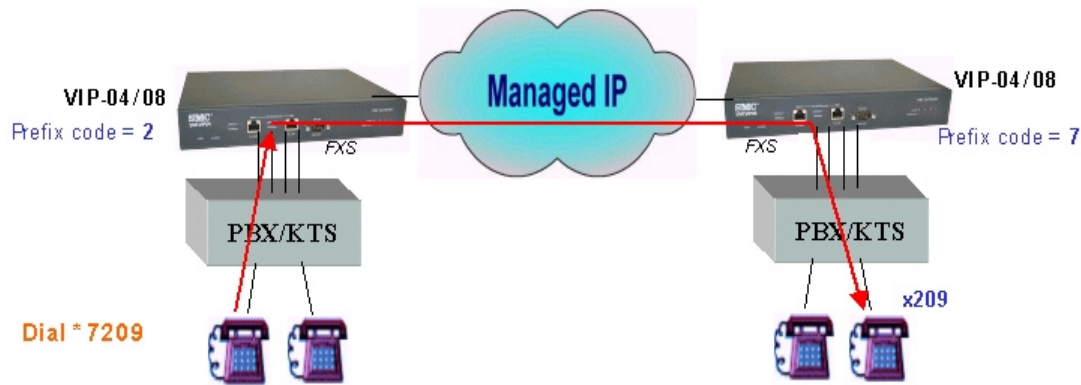


Fig 8 Diagram of utilizing Embedded QoS function while stacking the devices

4.4.1 Connectors and LED Indicators

WARNING: Please verify that the lines that are going to plug into the FXS interfaces on PBX VoIP gateway do not have any power source ("0" voltage).

Front Panels

SMC-VIP08

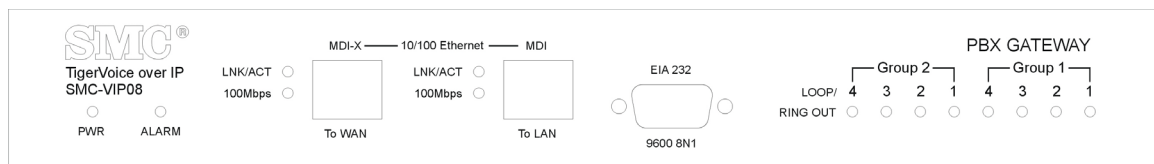


Fig 9 SMC-VIP08 Front Panel

SMC-VIP04



Fig 10 SMC-VIP04 Front Panel

Rear Panels

SMC-VIP08

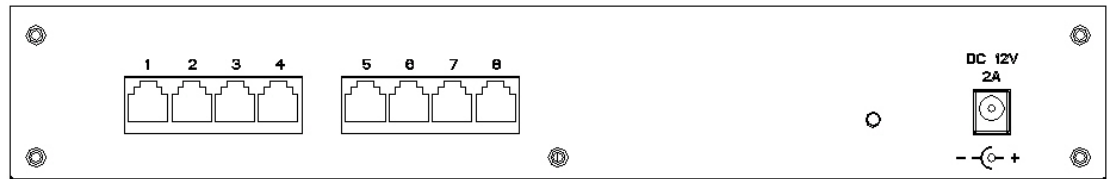


Fig 11 SMC-VIP08 Rear Panel

SMC-VIP04

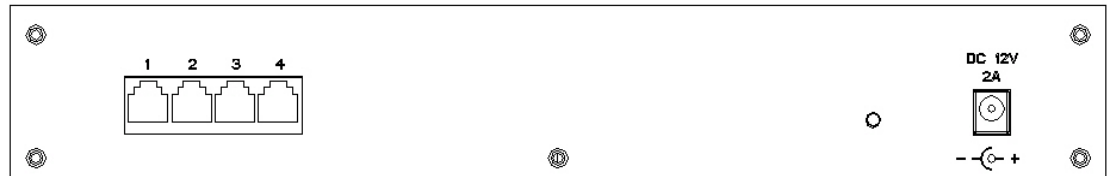


Fig 12 SMC-VIP04 Rear Panel

Connectors Description

Connectors	Type	Description
To WAN 10/100 Ethernet	RJ45 with MDI-X	Designed to connect to the Ethernet port on Router.
To LAN 10/100 Ethernet	RJ45 with MDI	Designed to connect to one of the LAN's HUB/Switch ports.
EIA-232	DB-9 DTE	Can be connected to a VT100 terminal or system console. The terminal should be configured to 9600 baud, 8 bits, 1 stop bits and none parity check.
POTS Ports	RJ-11	Where a POTS telephone is connected or to the PBX analog trunk.
Power		DC-12 Volt, positive center

LED Description

LED	Label	Description
10/100 Ethernet	LNK/ACT	When lit, indicates a network connection. The LED will flash when network traffic is detected.
	100Mbps	Indicating the network is running at 100Mbps
Port Information	LOOP/ RING OUT	When lit, indicates a loop has been detected. Flashing, indicates an outgoing call.
Device	Power	Indicates stable power.
	Alarm	The device will halt and the indicator will continue to light on if a system test failure is detected. When this gateway is a Slave gateway, the Alarm LED will be Red if this Slave gateway is unable to communicate with the remote Master gateway. If this gateway successfully synchronized with the remote Master gateway, the Alarm LED will be dark. For Master gateway, the Alarm LED will not light on unless there is hardware error.

4.5 Configuring the Gateway ID and Password

You need to configure the Gateway to let you distinguish multiple PBX VoIP gateways from each other. You may also use this for added security and to prevent any unauthorized access.

4.5.1 Using System Console

The following process shows how the host name and password can be configured via the system console. Before you begin, make sure you have performed the following

- Connect a VT100 terminal to the console port: 9600, 8, 1, N
- Power on the gateway until it displays "SMC-VIP08>"

Step 1: Enter Privileged Mode

```
SMC VoIP>enable
Password: *****
SMC VoIP#
```

There is no factory default password set.

Step 2: Enter configuration mode

```
SMC VoIP#configure terminal
Enter configuration commands, one per line. End with CTRL/Z
SMC VoIP (config)#
```

Step 3: Modify the name of the gateway for easy reference

```
SMC VoIP (config)#hostname build-A
Build-A (config)#
```

Step 4: Change the privileged mode password.

```
Build-A (config)#password read <password>
```

To configure the password for read-only privilege

or

```
Build-A (config)#password write <password>
```

To configure the password for read and write privilege

The privileges are divided into read-only and read write with different password. After you have issued this command, you will then be asked to enter this password each time you enter privileged mode. Any combination of characters and digits are allowed with a maximum of 6 characters/digits. Here is an example:

```
Build-A (config)#password read psw
Build-A (config)#
```

4.6 IP Configuration

The TigerAccess VoIP also requires you to configure the IP address, subnet mask and default gateway so that the PBX VoIP gateway is able to connect to the IP network. Since the device provides a 10BASE-T/100BASE-TX Ethernet interface with a default auto-negotiation setting, it will work like a plug-and-play device, so a manual configuration should not be necessary.

The system provides two types of IP assignment:

1. User manually assigned (static)
2. Through a DHCP server.

You can use the **IP state** command to select the appropriate mode that is used by your network. The default value is set to User Manually assigned. On first receiving the gateway, you must assign the IP address manually. If you want the gateway to receive the IP address from the DHCP server, you must set the IP state mode to DHCP mode. If a DHCP server is used, it will request the IP address from the server. However, if the DHCP server does not respond within 1 minute, the system will attempt to use the user assigned IP address.

Please note that when the system is in DHCP mode, the IP address received from the DHCP server will be saved in the configuration file as the user assigned IP.

Modifications will not take effect until after you restart your system.

4.6.1 User Assigned IP Address

Using System Console Interface or Telnet

Step 1: Enter privileged mode

```
SMC VoIP>enable
Password: *****
SMC VoIP#
```

Step 2: Enter Configuration Mode

```
SMC VoIP#configure
Enter configuration commands, one per line. End with CTRL/Z
SMC VoIP (config)#
```

Step 3: Assign the IP address and the subnet mask

Command: SMC VoIP (config)#**ip address** <ip-address> <subnet-mask>

```
SMC VoIP (config)#ip address 203.79.238.144 255.255.255.128
System need to restart
SMC VoIP (config)#
```

Step 4: Assign the default gateway

Command: SMC VoIP (config)#**ip default-gateway** <address>

```
PF1008 (config)#ip default-gateway 203.79.238.186
PF1008 (config)#
```

Step 5: Save the configuration to non-volatile memory immediately. If you do not save, your new configurations will be lost when you power off. However, the system will save the configuration automatically if (within 1 Minute) no input has been detected.

```
PF1008 (config)#dbflush
PF1008 (config)#
```

Step 6: go back to Privilege mode

```
PF1008 (config)#exit
```

SMC VoIP#

Step 7: Restart the system so that your changes will take effect. After the restart command is issued, the system will prompt for a confirmation.

SMC VoIP#**restart**

This command resets the system. System will restart operation code agent.

Reset system, [Y]es or [N]o? Yes

Using Phone Set Interface

Step 1: Hook Off the handset

Step 2: Dial the PROG Access Code after hearing the dial tone (default is ##)

Step 3: Enter the Password (default is 0000)

Step 4: Enter code "02".

Step 5: Enter the IP address as "203", "*", "79", "*", "238", "144" and "#" as ending prompt. And you will hear the confirmation tone.

Step 6: Enter code "03" to begin the subnet mask configuration..

Step 7: Enter the subnetmask as "255", "*", "255", "*", "255", "*", "128" and "#" as ending prompt. And you will hear the confirmation tone.

Step 8: Enter code "04" to begin the IP address for default gateway configuration.

Step 9: Enter the IP address of default gateway as "203", "*", "79", "*", "238", "*", "186" and "#" as ending prompt. And you will hear the confirmation tone.

System must restart

Step 10: Enter code "98" then press "1" and "#" as ending prompt. Then you will hear the confirmation tone, then the system will restart automatically.

Put on handset to hook on the phone for stop configuration.

4.6.2 Get the IP Address From a DHCP Server

Using System Console Interface

Step 1: Enter privileged mode

SMC VoIP>enable

```
Password: *****  
SMC VoIP#
```

Step 2: Enter Configuration Mode

```
SMC VoIP#configure  
Enter configuration commands, one per line. End with CTRL/Z  
SMC VoIP (config)#
```

Step 3: Enable DHCP mode

```
SMC VoIP (config)#ip state dhcp  
SMC VoIP (config)#
```

Step 4: Back to Privileged mode

```
SMC VoIP (config)#exit  
SMC VoIP#
```

Step 5: Restart the system to enable DHCP mode. After the restart command is issued, the system will prompt for a confirmation.

```
SMC VoIP#restart  
This command resets the system. System will restart operation code  
agent.  
Reset system, [Y]es or [N]o? Yes
```

Using Phone Set Interface (please refer to for more detail information in **Appendix A - Phone Set Interface Configuration Procedures**)

Step 1: Hook Off the handset.

Step 2: Dial the PROG Access Code after hearing the dial tone.

Step 3: Enter the Password.¹

Step 4: Enter code "01" to begin configuring the DHCP state.

Step 5: Enter "1" to enable DHCP client and "#" as ending prompt. And you will hear the confirmation tone. (Or enter "0" to disable DHCP client and "#" as ending prompt).

¹ The default password for Phone Set Interface is "0000".

System must restart

Step 6: Enter code "98" then press "1" and "#" as ending prompt. Then you will hear the confirmation tone, then the system will restart automatically.

Put on handset to hook on the phone for stop configuration.

4.7 Configuration as Master

Using System Console Interface or Telnet

Step 1: Enter privileged mode

```
SMC VoIP>enable
Password: *****
SMC VoIP#
```

Step 2: Enter Routing Mode

```
SMC VoIP#routing
SMC VoIP (routing)#
```

Step 3: Configure this device as Master gateway by setting its value to 0.0.0.0²

```
Command: SMC VoIP (routing)#master_ip 0.0.0.0
SMC VoIP (routing)#
```

(System needs to restart to take new configuration effective)

Step 4: Configure the group ID since that's what is used for the whole group

```
Command: SMC VoIP(routing)#group_id <the group ID for the whole
group, same value for master and slaves in the same group>
SMC VoIP(routing)#group_id 2000
System need to restart
SMC VoIP(routing)#
```

Step 5: Go back to Privileged mode

² For IP address other than 0.0.0.0 will not be taken as Master Device.

```
SMC VoIP (routing)#exit  
SMC VoIP#
```

Step 6: Restart the system for the settings to take effect. After the restart command is issued, the system will prompt for a confirmation.

```
SMC VoIP#restart  
This command resets the system. System will restart operation code agent.  
Reset system, [Y]es or [N]o? Yes
```

Step 7: Configuring the Prefix for gateway

This prefix of the gateway should be assigned by the network administrator and configured to the device. It will be carried in the routing messages to notify the master device of its prefix for other gateways to route its calls.

Command: SMC VoIP (routing)#**prefix** <prefix for this gateway>

```
SMC VoIP (routing)#prefix 99  
SMC VoIP (routing)#
```

Step 8: Configuring the Internal Call Access code for gateway

```
Command: SMC VoIP(routing-code)#internal_ac <Internal Calls  
Access code for this gateway>  
SMC VoIP(routing)#code  
SMC VoIP(routing-code)#  
SMC VoIP(routing-code)#internal_ac *
```

Step 9: Configuring the Extension Number Length of PBX

```
Command: SMC VoIP(routing-code)#extension_len <length of  
extension number of PBX>  
SMC VoIP(routing)#code  
SMC VoIP(routing-code)#  
SMC VoIP(routing-code)#extension_len 3
```

Using Phone Set Interface (please refer to for more detail information in **Appendix A - Phone Set Interface Configuration Procedures**)

Step 1: Hook Off the handset.

Step 2: Dial the PROG Access Code after hearing the dial tone.

Step 3: Enter the Password.

Step 4: Enter code "06" to begin configuring for IP address of Master gateway.

Step 5: Enter the IP address for Master gateway as "0", "*", "0", "*", "0", "*", "0" and "#" as ending prompt. And you will hear the confirmation tone.

Step 8: Enter code "05" to begin the group ID configuration.

Step 9: Enter the group ID as "2009" and "#" as ending prompt. And you will hear the confirmation tone.

System must restart

Step 10: Enter code "98" then press "1" and "#" as ending prompt. Then you will hear the confirmation tone, then the system will restart automatically.

Step 11: Enter code "09" to begin configuring for prefix for this gateway.

Step 12: Enter the prefix as "99" and "#" as ending prompt. And you will hear the confirmation tone.

Step 13: Enter code "14" to begin configuring for Internal Call Access code for this gateway.

Step 14: Enter the Internal Call Access Code as "*" and "#" as ending prompt. And you will hear the confirmation tone.

Step 15: Enter code "28" to begin configuring for Extension Number Length of PBX for this gateway.

Step 16: Enter the Extension Number Length of PBX as "3" and "#" as ending prompt. And you will hear the confirmation tone.

Put on handset to hook on the phone for stop configuration.

4.8 Slaves Configuration

Since the Master PBX gateway keeps a list of slaves, you need to join the group by adding an entry into the Master for each Slave gateway. To add an entry you have to input the MAC address to the member list of slave devices.

Using System Console Interface or Telnet on Master

Step 1: Enter privileged mode

```
SMC VoIP>enable  
Password: *****  
SMC VoIP#
```

Step 2: Enter Routing Mode

```
SMC VoIP#routing  
SMC VoIP (routing)#
```

Step 3: Create an entry for this slave gateway

Command: SMC VoIP (routing)#**slave add** <ffffff-ffffff, the MAC address of this Slave Device>

```
SMC VoIP (routing)#slave add 000362-000004  
SMC VoIP (routing)#show slave  
0001. 00-03-62-00-00-01  
0002. 00-03-62-01-00-01  
0003. 00-03-62-01-00-1B  
0004. 00-03-62-01-00-30  
0005. 00-03-62-00-00-04  
0006. 00-03-62-01-00-06
```

Using Phone Set Interface to create entry for Slave gateway on Master gateway (please refer to for more detail information in **Appendix A - Phone Set Interface Configuration Procedures**)

Step 1: Hook Off the handset.

Step 2: Dial the PROG Access Code after hearing the dial tone.

Step 3: Enter the Password.

Step 4: Enter code "22" to begin creating an entry for Slave gateway.

Step 5: Enter the **last 6** characters of MAC address of the Slave gateway (00-03-62-00-00-04) as "000004" and "#" as ending prompt. And you will hear the confirmation tone.

Put on handset to hook on the phone for stop configuration.

Using System Console Interface or Telnet on slave

Step 1: Enter privileged mode

```
SMC VoIP>enable  
Password: *****  
SMC VoIP#
```

Step 2: Enter Routing Mode

```
SMC VoIP#routing  
SMC VoIP (routing)#
```

Step 3: Configure this device as Master gateway

```
Command: SMC VoIP (routing)#master_ip 211.21.40.180  
SMC VoIP (routing)#
```

Step 4: Configure the group ID for that is used for the whole group

```
Command: SMC VoIP(routing)#group_id <the group ID for the whole  
group, same value for master and slaves in the same group>  
SMC VoIP(routing)#group_id 2000  
System need to restart  
SMC VoIP(routing)#
```

Step 5: go back to Privileged mode

```
SMC VoIP (routing)#exit  
SMC VoIP#
```

Step 6: Restart the system for the settings to take effect. After the restart command is issued, the system will prompt for a confirmation.

```
SMC VoIP#restart  
This command resets the system. System will restart operation code  
agent.  
Reset system, [Y]es or [N]o? Yes
```

Step 7: Configuring the Prefix for gateway

This prefix of the gateway should be assigned by the network administrator and configured to the device. It will be carried in the routing messages to notify the master device of its prefix for other gateways to route its calls.

Command: SMC VoIP (routing)#**prefix** <prefix for this gateway>

SMC VoIP (routing)#**prefix** 33

SMC VoIP (routing)#

Step 8: Configuring the Internal Call Access code for gateway (default is "")**

Command: SMC VoIP(routing-code)#**internal_ac** <Internal Calls
Access code for this gateway>

SMC VoIP(routing)#**code**

SMC VoIP(routing-code)#

SMC VoIP(routing-code)#**internal_ac** *

Step 9: Configuring the Extension Number Length of PBX

Command: SMC VoIP(routing-code)#**extension_len** <length of
extension number of PBX>

SMC VoIP(routing)#**code**

SMC VoIP(routing-code)#

SMC VoIP(routing-code)#**extension_len** 3

Using Phone Set Interface to Set the IP Address of Master gateway on Slave gateway
(please refer to for more detail information in **Appendix A - Phone Set Interface Configuration Procedures**)

Step 1: Pick up the handset.

Step 2: Dial the PROG Access Code after hearing the dial tone.

Step 3: Enter the Password.

Step 4: Enter code "06" to begin to configure the IP address of Master gateway.

Step 5: Enter the IP address of the Master gateway as "211", "*", "21", "*",
"40", "*", "180" and "#" as ending prompt. You will hear the confirmation tone.

Step 8: Enter code "05" to begin the group ID configuration.

Step 9: Enter the group ID as "2009" and "#" as ending prompt. And you will hear
the confirmation tone.

System must be restarted

Step 10: Enter code "98" then press "1" and "#" as ending prompt. Then
you will hear the confirmation tone, after which the system will restart automatically.

Step 11: Enter code "09" to begin configuring for prefix for this gateway.

Step 12: Enter the prefix as "33" and "#" as ending prompt. And you will hear the confirmation tone.

Step 13: Enter code "14" to begin configuring for Internal Call Access code for this gateway.

Step 14: Enter the Internal Call Access Code as "*" and "#" as ending prompt. And you will hear the confirmation tone.

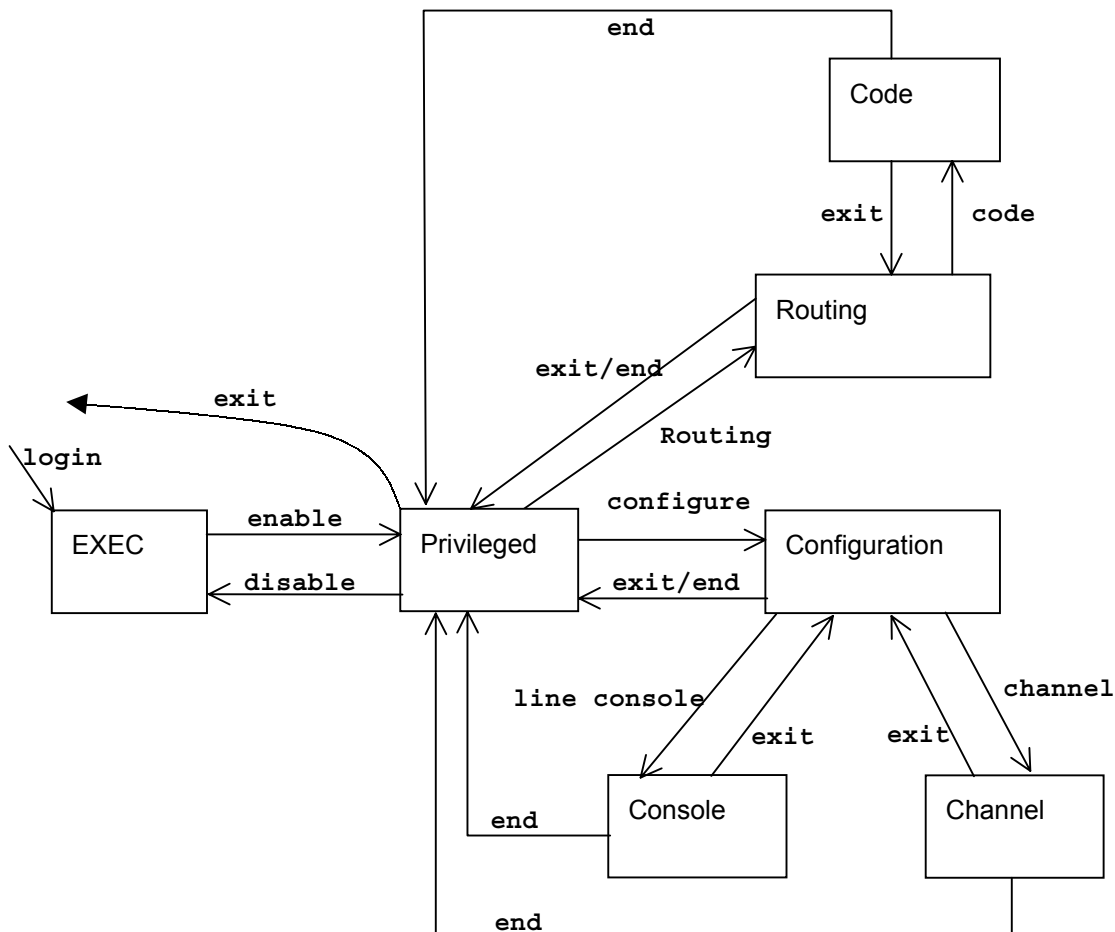
Step 15: Enter code "28" to begin configuring for Extension Number Length of PBX for this gateway.

Step 16: Enter the Extension Number Length of PBX as "3" and "#" as ending prompt. And you will hear the confirmation tone.

Put on handset to hook on the phone for stop configuration.

5 Basic Configuration

5.1 System Console Modes




5.2 System Management

The following general information is needed to configure the system with appropriate routing information to route calls between PBXs and voice gateways. You must configure the prefix and group ID that will be used inside the group of the PBX VoIP gateway. The Master gateway IP address is essential for a PBX VoIP gateway to synchronize the routing information.

5.2.1 Information-Web Management

SYSTEM MANAGEMENT

VoIP PBX Gateway

HOME		SYSTEM		TCP/IP		CHANNEL		INTERFACE		UPGRADE		MAP&HELP	
												<input type="button" value="Apply"/> <input type="button" value="Revert"/>	
Information													
Host Name		<input type="text" value="PBX Gateway"/>											
System Location		<input type="text"/>											
Software Version		1.01											
BootRom Version		0.03											
CPU Board Version		1.01											
FXS Board Version		1											
Host Up-Time		0 day 0 hr 0 min 57 sec											
Base Ethernet Address		00-03-62-80-01-87											
Date		2001/05/31											
Time		04:44:22											
Set Date (yyyy/mm/dd)		<input type="text"/>											
Set Time (hh:mm:ss)		<input type="text"/>											
System Restart													
Restart Mode		<input type="text" value="None"/>											

ALL RIGHTS RESERVED

Category	Entry	Description	Data Type	Range
Information	Host Name	Name of the gateway for the system administrator to distinguish this gateway from others. It will also be used as a prompt in the system console.	RW	Any string length up to 48 characters can be used. You may input a total of 255 characters. However once a length of 48 is reached any characters above that will be truncated.
	Location	This entry allows the system administrator to identify the gateway's location.	RW	Any string length up to 48 characters can be used. You may input a total of 255 characters. However once a length of 48 is reached any characters above that will be truncated.
	Software Version	Current software version	RO	X.XX
	BootRom Version	Current BootRom Code version	RO	X.XX
	CPU Board Version	Current CPU Board version	RO	X.XX
	FXS Board Version	Current FXS Board version	RO	X.XX
	Host Up-Time	System Up-Time after last Warm Start	RO	X.XX
	Base Ethernet Address	The Ethernet Address of this device	RO	XX-XX-XX-XX-XX-XX
	Date	Current date	RW	yyyy/mm/dd
	Time	Current Time	RW	hh:mm:ss
System Restart	Restart Mode	This pull-down menu allows you to select the restart mode: None: No system restart will be issued: Cold Start: The system will restart from the beginning. The running code will be	RW	NONE Cold Start Warm Start

Category	Entry	Description	Data Type	Range
		decompressed from the flash memory and initiate all the system parameters. Warm Start: The system will restart but the running code will not be decompressed.		

5.2.2 Console Commands -System Information

Category	Entry	Console Mode	Console Command	Data Type
Information	Host Name	Configuration	<code>hostname <string></code>	RW
	Location	Configuration	<code>location <string></code>	RW
	Software Version	EXEC/Privilege	<code>Show Version</code>	RO
	BootRom Version	EXEC/Privilege	<code>Show Version</code>	RO
	CPU Board Version	EXEC/Privilege	<code>Show Version</code>	RO
	FXS Board Version	EXEC/Privilege	<code>Show Version</code>	RO
	Host Up-Time	EXEC/Privilege	<code>Show Version</code>	RO
	Base Ethernet Address	EXEC/Privilege	<code>Show Version</code>	RO
	Date	EXEC/Privilege	<code>Show date</code>	RO
	Time	EXEC/Privilege	<code>Show time</code>	RO
	Date	Configuration	<code>date <yyyy/mm/dd></code>	RW
	Time	Configuration	<code>time <hh:mm:ss></code>	RW
System Restart	Restart Mode	Privilege	<code>restart</code> for warm start <code>reload</code> for cold start	WO


5.2.3

Registration-Web Interface

SYSTEM MANAGEMENT

VoIP PBX Gateway

HOME	SYSTEM	TCP/IP	CHANNEL	INTERFACE	UPGRADE	MAP&HELP
------	--------	--------	---------	-----------	---------	----------



Current Device Role : Slave

[Act As Master](#)
[Act as Slave](#)

INFORMATION *

REGISTRATION *

CONFIGURATION *

NUMBERING PLAN *

INTERNATIONAL CODE *

LONG DISTANCE CODE *

ROUTING TABLE *

PIN CODE *

TOPOLOGY *

ROUTE SEARCH *

ALL RIGHTS RESERVED


Category	Entry	Description	Data Type	Range
Registration	Current Device Role	Slave if this Device is currently configured as Slave gateway (or Master)	RO	
	As Master / As Slave	Name of the gateway for the system administrator to distinguish this gateway from others. It will also be used as a prompt in the system console.	RO	

As a Master

SYSTEM MANAGEMENT

VoIP PBX Gateway

HOME	SYSTEM	TCP/IP	CHANNEL	INTERFACE	UPGRADE	MAP&HELP
------	--------	--------	---------	-----------	---------	----------



- INFORMATION
- REGISTRATION
- CONFIGURATION
- NUMBERING PLAN
- INTERNATIONAL CODE
- LONG DISTANCE CODE
- ROUTING TABLE
- PIN CODE
- TOPOLOGY
- ROUTE SEARCH

Act As Master

Group Id (0~2147483647)

Prefix

Slave Registration

Capacity 0

Quantity 0

Slave List

Add Slaves

Delete Slaves


ALL RIGHTS RESERVED

Category	Entry	Description	Data Type	Range
Act As Master	Group ID	The Group ID for PBX VoIP Gateway	RW	0~2147423467
	Prefix	The prefix is the code used to route a call to this gateway	RW	1~9999
Slave Registration	Capacity	The allowed capacity for slave entries	RO	31 not including the Master
	Quantity	Current registered slaves	RO	0~31
	Slave List	The list of MAC address of current registered slaves	RO	
	Add Slaves	Entry to add MAC address of slave	RW	XX-XX-XX-XX-XX-XX
	Delete Slaves	Entry to delete MAC address of slave	RW	XX-XX-XX-XX-XX-XX

As a Slave

SYSTEM MANAGEMENT **VoIP PBX Gateway**

[HOME](#)
[SYSTEM](#)
[TCP/IP](#)
[CHANNEL](#)
[INTERFACE](#)
[UPGRADE](#)
[MAP&HELP](#)



- [INFORMATION](#)
- [REGISTRATION](#)
- [CONFIGURATION](#)
- [NUMBERING PLAN](#)
- [INTERNATIONAL CODE](#)
- [LONG DISTANCE CODE](#)
- [ROUTING TABLE](#)
- [PIN CODE](#)
- [TOPOLOGY](#)
- [ROUTE SEARCH](#)

Act As Slave

Group Id	<input type="text" value="2000"/>	(0~2147483647)
Prefix	<input type="text" value="89"/>	
Master IP Address	<input type="text" value="216.23.54.23"/>	
Group Id Hold Time	<input type="text" value="Forever"/>	

ALL RIGHTS RESERVED

Category	Entry	Description	Data Type	Range
Act As Slave	Group ID	The Group ID for PBX VoIP Gateway	RW	0~2147423467
	Prefix	The prefix is the code used to route a call to this gateway	RW	1~9999
	Master IP Address	The IP Address of the Master gateway	RW	XXX.XXX.XX.XXX
	Group Id Hold Time ³	The Hold Time for Group Id in the device when it is powered off	RW	Forever 0.5 hr 1.0 hr 1.5 hr 2.0 hr 2.5 hr 3.0 hr 3.5 hr 4.0 hr 4.5 hr 5.0 hr

³ The Group Id Hold time is used for protect the group Id to prevent the intruders from stole a device and re-installed it in another place.

5.2.4 Registration Information- Console Interface

Category	Entry	Console Mode	Console Command	Data Type
Registration	Group Id	Routing	group_id <number>	RW
	Prefix	Routing	prefix <number>	RW
	Master IP	Routing	master_ip <xxx.xxx.xxx.xxx>	RW
	Add Slave	Routing	Slave add <ffffff-ffffff>	RW
	Delete Slave	Routing	Slave del <ffffff-ffffff>	RW
	Group Id Hold Time	Routing	gid_tmr <0-255>	RW
	Slave List	Routing	show slave ⁴	RO


5.2.5 Configuration-Web Interface

SYSTEM MANAGEMENT

VoIP PBX Gateway



Apply Revert



- INFORMATION
- REGISTRATION
- CONFIGURATION**
- NUMBERING PLAN
- INTERNATIONAL CODE
- LONG DISTANCE CODE
- ROUTING TABLE
- PIN CODE
- TOPOLOGY
- ROUTE SEARCH

Configuration

Transit Call Function	Enable
CDR Report	Enable
Greeting Mode	Default
Auto Attendant	Not Provided
Slave UDP Port	2000 (Need Warm-Restart)
Master UDP Port	2000 (Need Warm-Restart)
RTP Base Port (Must be even)	4000 (Need Warm-Restart)

ALL RIGHTS RESERVED

Category	Entry	Description	Data Type	Range
----------	-------	-------------	-----------	-------

⁴ show slave only work on Master gateway in Console Interface.

Configuration	Transit Call Function	Allow or Disallow Transit Call	RW	Enable/Disable
	CDR Report	Allow or Disallow CDR report output ⁵	RW	Enable/Disable
	Greeting Mode	Default for not using the recorded Greeting Message or Recording for using the recorded Greeting Message ⁶	RW	Default/Recording
	Auto Attendant	Whether or not your PBX equipped with Auto Attendant function	RW	Provided/Not Provided
	Slave UDP Port No.	The UDP port number to carry Call Control signaling from this Slave devices with other gateways	RW	1025~65535 (default value is 2000)
	Master UDP Port No.	The UDP port number to carry Port Information signaling to Master device	RW	1025~65535 (default value is 2000)
	RTP Base Port No.	The Base RTP port number to carry voice streaming between gateways	RW	2049~65535

Note 2 The Master UDP port number on Slave devices should be the same as the definition on Master device. But The Slave UDP port number for each slave can be different for each device.



The configurations of UDP port number and RTP port number are related to the firewall setting of your network. Please consult with your network administrator before changing it.

⁵ CDR report work only on the model that with extra RS-232 CDR output interface

⁶ You can use the Phone Set Interface to configure the Skip Greeting Access Code (item code 30) to specify the access code while trying to skip the greeting message even if this function is Enabled.

5.2.6 Configuration Information- Console Interface

Category	Entry	Console Mode	Console Command	Data Type
Routing	Transit Call Function	Routing	transit_call <enable/disable>	RW
	CDR Report	Routing	cdr <enable/disable>	RW
	Greeting Mode	Routing	greet_mode <default/recoding>	RW
	Auto Attendant	Routing	auto_attn <enable/disable>	RW
	Master UDP Port No.	Routing	udp_port master <0-65535>	RW
	Slave UDP Port No.	Routing	udp_port slave <0-65535>	RW
	RTP Base Port No.	Routing	rtp_base <0-255>	RW


5.2.7

Numbering Plan-Web Interface

SYSTEM MANAGEMENT

VoIP PBX Gateway

HOME	SYSTEM	TCP/IP	CHANNEL	INTERFACE	UPGRADE	MAP&HELP
------	--------	--------	---------	-----------	---------	----------



- [INFORMATION](#)
- [REGISTRATION](#)
- [CONFIGURATION](#)
- [NUMBERING PLAN](#)
- [INTERNATIONAL CODE](#)
- [LONG DISTANCE CODE](#)
- [ROUTING TABLE](#)
- [PIN CODE](#)
- [TOPOLOGY](#)
- [ROUTE SEARCH](#)

Numbering Plan

Country Code

Area Code

Extension Digits

Access Code

Internal

Local PSTN

Transit

ALL RIGHTS RESERVED

Category	Entry	Description	Data Type	Range
Numbering Plan	Country Code	The Country Code where this gateway is for receiving incoming calls from foreign countries	RW	1~999
	Area Code	The Area Code where this gateway is for receiving incoming calls from other areas	RW	1~999
	Extension Digits	The number of digits for PBX lines	RW	1-9
Access Code	Internal	Define the Access Code to make a call in-between the PBX gateways in the same group (See application in 3.1 Internal Calls)	RW	[1~9,*,#][0~9], example "**12345"
	Local PSTN	Define the Access Code to force a call out from FXO interface on the PBX gateway to PSTN ⁷	RW	[1~9,*,#][0~9], example "**12345"
	Transit	Define the Access Code to make a call from PSTN into the FXO port on this device and call out from FXO interface on the remote PBX gateway to PSTN (This function take effective only when you got FXO interfaces exist in your group) ⁸	RW	[1~9,*,#][0~9], example "**12345"

⁷ This function works only on those models that with FXO interface.

⁸ This function works only on those models that with FXO interface.

5.2.8 Numbering Plan Information- Console Interface

Category	Entry	Console Mode	Console Command	Data Type
Numbering Plan	Country Code	Code	country <1-999>	RW
	Area Code	Code	area <1-999>	RW
	Extension Digits	Code	extension_len <1-9>	RW
Access Code	Internal	Code	internal_ac <Access Code>	RW
	Local PSTN	Code	local_pstn_ac <Access Code>	RW
	Transit	Code	transit_ac <Access Code>	RW

Note 3 Access Code can be a character range from [*|#|0~9] or the character plus a number in 1 to 5 digits. For examples, you can set your access code as "", "*1", "*999" and etc.


5.2.9

International Code-Web Interface

SYSTEM MANAGEMENT

VoIP PBX Gateway

HOME	SYSTEM	TCP/IP	CHANNEL	INTERFACE	UPGRADE	MAP&HELP
------	--------	--------	---------	-----------	---------	----------



- [INFORMATION](#)
- [REGISTRATION](#)
- [CONFIGURATION](#)
- [NUMBERING PLAN](#)
- [INTERNATIONAL CODE](#)
- [LONG DISTANCE CODE](#)
- [ROUTING TABLE](#)
- [PIN CODE](#)
- [TOPOLOGY](#)
- [ROUTE SEARCH](#)

International Access Code Setup

Outbound

Dial Code

Inbound

Capacity 5

Quantity 1

Code List 011

Add Entries

Delete Entries

ALL RIGHTS RESERVED

Category	Entry	Description	Data Type	Range
International Access Code (Outbound)	Dial Code	The code that the gateway need to add while wants to make out an international call through this gateway	RW	1-999
International Access Code (Inbound) ⁹	Capacity	The number of In-bound International Access Code entries that are allowed to specified in this gateway	RO	5
	Quantity	The number of In-bound International Access Code entries that are currently specified in this gateway	RO	0-5
	Code List	The list of Inbound International Access Code that are currently configured in this gateway	RO	[0~9], example "012", "002"
	Add Entries	The Access Code that you are going to Add into the Code List	WO	[0~9], example "012", "002"
	Delete Entries	The Access Code that you are going to Remove from the Code List	WO	[0~9], example "012", "002"

Note 4 The Inbound International Access Code is used to analyze the number that gateway is receiving from a local PSTN via FXO interface or from a PBX via FXS interface. The receiving numbers that carry the specified Inbound International Access Code, will be

routed to the remote gateway that has the defined routing entry to access this International Access Code and be routed to its. Otherwise, this call will be treated as an international call from local PSTN and will not enjoy the Toll-bypass advantage. *If your gateway is not allowed to make an international call through the remote gateway, leave the In-bound International Access Code entry empty.*

5.2.10 International C Code Information- Console Interface

Category	Entry	Console Mode	Console Command	Data Type
International Access Code (Outbound)	Dial Code	Code	dial_code international <1-999>	RW
International Access Code (Inbound)	Code List	Code	show ac_summary	RO
	Add Entries	Code	intn_code add <1-999>	RW
	Delete Entries	Code	intn_code del <1-999>	RW

Note 5 The Access Code here is the same as the code that you are dialing locally to make an international call.

5.2.11

Long Distance Code-Web Interface

Category	Entry	Description	Data Type	Range
Long Distance Access Code (Outbound)	Dial Code	Applies to the device that have FXO interface.	NA	NA
Long Distance Access Code (Inbound) ⁹	Capacity	The number of In-bound Long Distance Call Access Code entries that are allowed to specified in this gateway	NA	NA
	Quantity	The number of In-bound Long Distance Call Access Code entries that are currently specified in this gateway	NA	NA
	Code List	The list of Inbound Long Distance Call Code that are currently configured in this gateway	NA	NA
	Add Entries	The Access Code that you are going to Add into the Code List	NA	NA
	Delete Entries	The Access Code that you are going to Remove from the Code List	NA	NA

5.2.12 Long Distance Code Information- Console Interface

Category	Entry	Console Mode	Console Command	Data Type
Long Distance Access Code (Outbound)	Dial Code	Code	dial_code long_distance <1-999>	RW
Long Distance Access Code (Inbound)	Code List	Code	show ac_summary	RO
	Add Entries	Code	long_distance add <1-999>	RW
	Delete Entries	Code	long_distance del <1-999>	RW

Note 6 The Access Code here the same as the code that your are dialing locally to make a Long Distance call.

⁹ If users wish to use the FXO interfaces on other VoIP gateways within the same group. You should specify the In-bound Access code, otherwise your call can not be redirect to remote gateway that with FXO interfaces.


5.2.13

Routing Table-Web Interface (No Function on SMC-VIP04 AND SMC-VIP08)

SYSTEM MANAGEMENT VoIP PBX Gateway

HOME SYSTEM TCP/IP CHANNEL INTERFACE **UPGRADE** MAP&HELP

Apply Revert



INFORMATION *

REGISTRATION *

CONFIGURATION *

NUMBERING PLAN *

INTERNATIONAL CODE *

LONG DISTANCE CODE *

ROUTING TABLE *

PIN CODE *

TOPOLOGY *

ROUTE SEARCH *

Routing Table

Capacity 20

Quantity 0

Route List

Add / Modify Entries

Route

Cost

Route

Cost

Route

Cost

Route

Cost

Delete Entries

Route

Route

Route

Route

ALL RIGHTS RESERVED

Category	Entry	Description	Data Type	Range
Routing Table	Capacity	The numbers of allowed entries for route a call to the PSTN via this gateway ¹⁰	RO	20
	Quantity	The number of routing entries that are currently configured in the gateway	RO	0-20
	Route List	The list of route entries with its route cost	RO	Format: [Routing Entry - Cost]
	Add /Modify Entries	To Add or Modify a routing entry or its cost	WO	Routing Entry: 0-999999; Cost: 1~99
	Delete Entries	To delete a routing entry	WO	0-999999

Note 7 For example, if a gateway is installed in the USA and wants to be the routing

¹⁰ This function works only on those gateways that are equipped with FXO interfaces. For FXS only gateways, you are not be able to see it in the Member List under the Topology icon with Web Interface.

gateway for all calls in the group to Ottawa - Canada. The routing entry for this example will be 1613 with cost 1 in this gateway you also need to specify the outbound International Access Code 011. So a call from gateway in Hong Kung will be route to PSTN in USA with dial out number 011-1-613-xxxx-xxx to Ottawa-Canada.

5.2.14 Routing Table- Console Interface

Category	Entry	Console Mode	Console Command	Data Type
Routing Table	Route List	Routing	<code>show call_route</code>	RO
	Add /Modify Entries	Routing	<code>call_route add <0-999999> <1-99></code>	WO
	Delete Entries	Routing	<code>call_route del <0-999999></code>	WO


Note 8 To modify a routing entry in Console Interface, you need to delete that entry and add it with the new value that you wants to modify.

5.2.15

Pin Code Assignment-Web Interface(No function on SMC-VIP08/SMC-VIP04)

SYSTEM MANAGEMENT

VoIP PBX Gateway

HOME		SYSTEM		TCP/IP		CHANNEL		INTERFACE		UPGRADE		MAP&HELP	
<input type="button" value="Apply"/> <input type="button" value="Revert"/>													
													
INFORMATION • REGISTRATION • CONFIGURATION • NUMBERING PLAN • INTERNATIONAL CODE • LONG DISTANCE CODE • ROUTING TABLE • PIN CODE • TOPOLOGY • ROUTE SEARCH •													
PIN Code For Transit Call													
Capacity		32											
Quantity		0											
Code List													
Add Entries		<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>											
Delete Entries		<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>											

ALL RIGHTS RESERVED

Category	Entry	Description	Data Type	Range
PIN Code For Transit Call	Capacity	The allowed entries for PIN codes to make a transit call via this gateway	RO	32
	Quantity	The number of PIN codes that are currently configured in this gateway	RO	0-32
	Code List	The list of PIN codes that is configured in this gateway	RO	
	Add Entries	To Add a PIN Code entry	WO	0-99999999
	Delete Entries	To delete a PIN Code entry	WO	0-99999999

5.2.16 Pin Code Assignment- Console Interface

Category	Entry	Console Mode	Console Command	Data Type
Routing Table	Code List	Routing	<code>show pin</code>	RO
	Add Entries	Routing	<code>pin add <0-99999999> <1-99></code>	WO
	Delete Entries	Routing	<code>pin del <0-99999999></code>	WO


5.2.17

Topology-Web Interface

SYSTEM MANAGEMENT VoIP PBX Gateway

HOME SYSTEM TCP/IP CHANNEL **INTERFACE** UPGRADE MAP&HELP

Refresh



- [INFORMATION](#)
- [REGISTRATION](#)
- [CONFIGURATION](#)
- [NUMBERING PLAN](#)
- [INTERNATIONAL CODE](#)
- [LONG DISTANCE CODE](#)
- [ROUTING TABLE](#)
- [PIN CODE](#)
- [TOPOLOGY](#)
- [ROUTE SEARCH](#)

Topology of VoIP Network

Total Members 6

Member List

Prefix = 89 , Route List :
None
Prefix = 65 , Route List :
None
Prefix = 33 , Route List :
None
Prefix = 88 , Route List :
None
Prefix = 44 , Route List :
None
Prefix = 11 , Route List :
None

ALL RIGHTS RESERVED

Category	Entry	Description	Data Type	Range
Topology	Total Member	The number of Member in the same group	RO	
	Member List	The list of gateways in the same group. Display the prefix that is specified for that gateway ¹¹	RO	

5.2.18 Topology- Console Interface

Note 9 There is no similar function in the Console Interface

5.2.19


¹¹ For those models that are equipped with FXO interfaces. The route list will be displayed with the Prefix in the Member List.

Route Search-Web Interface

SYSTEM MANAGEMENT

VoIP PBX Gateway

HOME
SYSTEM
TCP/IP
CHANNEL
INTERFACE
UPGRADE
MAP&HELP



- [INFORMATION](#)
- [REGISTRATION](#)
- [CONFIGURATION](#)
- [NUMBERING PLAN](#)
- [INTERNATIONAL CODE](#)
- [LONG DISTANCE CODE](#)
- [ROUTING TABLE](#)
- [PIN CODE](#)
- [TOPOLOGY](#)
- [ROUTE SEARCH](#)

Available Route Search

Route Entry

Results

ALL RIGHTS RESERVED

Category	Entry	Description	Data Type	Range
Route Search	IP Address	If the Prefix that specified in the previous section has been found, the IP address of that gateway will be displayed. Otherwise, "Not Found" will be displayed.	RO	
	Route Entry	The Route Entry that intend to search ¹²	WO	

5.2.20 Route Search- Console Interface

Note 10 There is no similar function in the Console Interface

¹² This function has the same restriction as other routing table related function. In another word, if you wants to find an entry that is specified in a gateway without FXO interface. The gateway in unable to route your calls to PSTN through it. So you can not have the search result even you had specified the routing entry in it. More than that, for the searching entry do not allow wild card, so you need to inter the search criteria exactly the same as you specified in the routing entries.

5.3 TCP/IP Configuration

The TCP/IP can be configured through the system console and the Web management interface. There are two ways to obtain the IP address:


1. System administrator manually assigned.
2. Through the DHCP server.

You can select which way you prefer to get the IP through setting the IP State mode. If *Manual* is selected, the administrator must assign it manually. If *DHCP* is selected, it will get the IP from the DHCP server. You need to set up a DHCP server and configure its IP address so that the gateway is able to locate it. If the gateway is configured using DHCP mode and it cannot find the DHCP server, it will use the IP that was previously configured. After the gateway has successfully acquired the IP address, it will update the newly received (manually configured) IP.

Web Management

CONFIGURING TCP/IP SETTINGS
VoIP PBX Gateway

HOME
SYSTEM
TCP/IP
CHANNEL
INTERFACE
UPGRADE
MAP&HELP



Internet Protocol (IP) Settings

IP State	<div style="border: 1px solid #ccc; padding: 2px;">Manual</div>
Now	
IP Address	211.21.40.180
Subnet Mask	255.255.255.248
Default Gateway	211.21.40.177
Next	
IP Address	<div style="border: 1px solid #ccc; padding: 2px;">211.21.40.180</div>
Subnet Mask	<div style="border: 1px solid #ccc; padding: 2px;">255.255.255.248</div>
Default Gateway	<div style="border: 1px solid #ccc; padding: 2px;">211.21.40.177</div>

Apply

Revert

ALL RIGHTS RESERVED

Category	Entry	Description	Data Type	Range
Information	IP State	Defines the mode used to acquire an IP address: Manual: static address mode. The system administrator must assign the IP address directly from the system console or web page. Auto (DHCP): If this mode is selected, the IP will be automatically selected from the DHCP server.	RW	Manual Auto (DHCP)
	Now	Displays the current IP address, subnet mask and default gateway.	RO	-
	Next	Sets the IP address, subnet mask and default gateway that will be used (after Restart) if the IP state is set to Manual mode.	RW	IP address

Console Commands

Category	Entry	Console Mode	Console Command
Information	IP State	configuration	ip state <user / dhcp>
	IP Address	configuration	ip address <ip address> <subnet mask>
	Default Gateway	configuration	ip default-gateway <ip address>

5.4 Channel Management

5.4.1 Summary

CHANNEL

VoIP PBX Gateway

HOME

SYSTEM


TCP/IP

CHANNEL

INTERFACE

UPGRADE

MAP&HELP



[SUMMARY](#)

[REGIONAL](#)

[CONFIGURATION](#)

[STATISTICS](#)

Channel	I/F Type	Status	Input Gain	Output Gain
1 / 1	FXS	Enable	0 dB	0 dB
1 / 2	FXS	Enable	0 dB	0 dB
1 / 3	FXS	Enable	0 dB	0 dB
1 / 4	FXS	Enable	0 dB	0 dB
2 / 1	FXS	Enable	0 dB	0 dB
2 / 2	FXS	Enable	0 dB	0 dB
2 / 3	FXS	Enable	0 dB	0 dB
2 / 4	FXS	Enable	0 dB	0 dB

All Rights Reserved

Category	Entry	Description	Data Type	Range
Summary	Channel	The channel number. It displays Group/Port format. Port 2 in group 1 will be shown as 1/2	RO	Two groups and 4 ports for each group
	I/F Type	Shows the ports interface type. This model shows FXS.	RO	FXS
	Operating Status	Shows the operation status of this port. Enable/Disable	RO	Enable Disable
	Input Gain	Shows the currently configured input gain	RO	-6 db to 6 db
	Output Gain	It shows the currently configured output gain	RO	-6 db to 6 db

5.4.2 Regional

The configuration shown in this page applies to each channel of the entire device.

CHANNEL

VoIP PBX Gateway

HOME

SYSTEM

TCP/IP

CHANNEL

INTERFACE

UPGRADE

MAP&HELP

SMC Networks

SUMMARY

REGIONAL

CONFIGURATION

STATISTICS

Information

Hook Flash Time

200 msec.

DTMF Play Out

Duration

100 msec.

Inter Digit Time

100 msec.

Busy Tone Spec.

Frequency (300~3000Hz)

f1 : 480 f2 : 620

Cadence (100~5000ms)

On : 500 Off : 500

Apply

Revert

ALL RIGHTS RESERVED

Category	Entry	Description	Data Type	Range
Information	Hook Flash Time	Defines the time frame of a break to be treated as a Flash signal.	RW	200ms 300ms 400ms 500 ms 600 ms 700 ms 800 ms 900 ms 1000 ms
DTMF Play out	Duration	Defines how long the DTMF will be sent when the gateway receives a DTMF Play Out message from the Call Agent.	RW	100 150 200 250 300 350 400 450 500 550 600 650 700 750 800

	Inter Digit Time	Defines the inter digit time of the DTMF when the gateway receives a DTMF Play Out message.	RW	100 150 200 250 300 350 400
Busy Tone Spec	Frequency	$f1, f2$		(300 ~ 3000Hz)
	Cadence	<i>on, off</i> The <i>on</i> and <i>off</i> duration to play the tone		(100 ~ 5000ms)

Console Commands

Category	Entry	Console Mode	Console Command
Information	Flash Time	Channel	Flash <200 - 1000>
DTMF Play out	Duration	Not supported in the console	
	Inter Digit Time		
Busy Tone Spec.	Frequency	There is no such function in Command Line Interface	
	Cadence		

5.4.3


Channel Configuration

The configuration shown on this web page applies to a single individual channel. You must select a channel and configure it to your particular specifications.

Web Management

CHANNEL

VoIP PBX Gateway

HOME	SYSTEM	TCP/IP	CHANNEL	INTERFACE	UPGRADE	MAP&HELP
<div>Apply Revert</div>						
<div></div>						
<div>SUMMARY • REGIONAL • CONFIGURATION • STATISTICS</div>						
<div>Channel <input type="text" value="1/1"/> <input type="button" value="Select"/></div>						
<div>Information</div>						
<div>I/F Type FXS</div>						
<div>Admin State <input type="button" value="Enable"/></div>						
<div>Operational State Enable</div>						
<div>Voice</div>						
<div>Codec Type <input type="text" value="G.729AB"/></div>						
<div>Packet Time <input type="text" value="40 ms (G.729 only)"/></div>						
<div>Jitter Buffer <input type="text" value="Auto"/></div>						
<div>Input Gain <input type="text" value="0"/> dB</div>						
<div>Output Gain <input type="text" value="0"/> dB</div>						

ALL RIGHTS RESERVED

Category	Entry	Description	Data Type	Range
	Channel	Channel number. Displays in Group/Port format. Port 2 in group 1 will be shown as 1/2	RW	One or two groups and 4 ports for each group. Default: 1/1
Information	I/F Type	Displays the channel interface type. The SMC-VIP08 supports FXS only.	RO	
	Admin State	Enables/disables the channel.	RW	Enable , Disable
	Operational State	Displays the current operational states.	RO	
Voice	Codec Type	When assigning the preferred port codec type.	RW	G.711 A Law, G. 711 u Law, G.729AB
	Packet Time	Defines how long the gateway will send a voice packet to the destination port. Please refer to the Available Packet time selection table.	RW	10ms – G.711, 20ms – G.711, G.729A, 30ms – G.711, 40ms – G.729A , 60ms – G.729A, 80ms – G.729A
	Input Gain	Input gain selection.	RW	-6, -5, -4, -3, -2, -1, 0 , 1, 2, 3, 4, 5, 6 db
	Output Gain	Output gain selection.		-6, -5, -4, -3, -2, -1, 0 , 1, 2, 3, 4, 5, 6 db

Table: Available packet time supported by different coding type

Codec Types	10ms	20ms	30ms	40ms	60ms	80ms
G.711	√	√	√			
G.729A		√		√	√	√

Console Commands

Category	Entry	Console Mode	Console Command
Information	Admin State	Console	channel <group/port> <enable disable>
Voice	Codec Type	-	Not supported
	Packet Time	-	Not supported
	Input gain	Console	gain input <group/port> <-6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6>
	Output Gain	Console	gain output <group/port> <-6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6>


5.4.4 Statistics

This web page shows the configuration and statistical information of each channel. You simply must select a channel number and click the refresh button. The gateway will then return a page showing its current configuration and statistical data.

Web Management

CHANNEL
VoIP PBX Gateway

HOME
SYSTEM
TCP/IP
CHANNEL
INTERFACE
UPGRADE
MAP&HELP



[SUMMARY](#)
[REGIONAL](#)
[CONFIGURATION](#)
[STATISTICS](#)

Channel 1/1

Current Codec Type

G.729AB

Packet Time (msec)

40

VAD

Disable

Echo Cancell

Enable

Jitter Buffer (msec)

0

DTMF Filter

Disable

Busy Time (sec)

0

☐ Reset Busy Time

Counter Type	Value
Call Attempt	0
Successful Outgoing Call	0
Incoming Call	0
Successful Incoming Call	0

Refresh

ALL RIGHTS RESERVED.

Category	Entry	Description	Data Type	Range
	Channel	The channel number. Shown in the Group/Port format. Port 2 in group 1 will be shown in 1/2	RW	Two groups and 4 ports for each group. 1/1
	Current Codec Type	Displays the current codec that the channel is using	RO	
	Packet Time (msec)	Displays the current packet time this channel is using	RO	
	VAD	Displays VAD administrative status	RO	
	Echo Cancellation	Displays Echo Cancellation administrative status	RO	
	Jitter Buffer (msec)	Displays how long the jitter buffer is used in this channel. If the channel has no traffic, the last value that was used by the previous call will be displayed. 0 stands for AUTO jitter buffer.	RO	
	DTMF Filter	Displays DTMF Filter administrative status		
	Busy Time (sec)	Displays the length of time this channel has been in a busy state. (Includes incoming and outgoing calls.) The busy time will be reset when you power off.	RO	
	Reset Busy Time	A check box. If checked and the refresh button is clicked, Busy Time will be reset.	RW	
	Call Attempt	Displays the number of call attempts that have been made.	RO	
	Successful Outgoing Call	Displays the number of successful outgoing calls that have been made.	RO	
	Incoming Call	Displays the total number of incoming calls	RO	
	Successful Incoming Call	Displays the number of successful incoming calls	RO	


5.5 Management Interfaces

SMC TigerAccess VoIP Gateways are flexible with Web Management Interface, Console Management Interface through RS-232 or Telnet and Phone Set Configuration Interface. You can configure the parameters for different management interfaces through web management interface or through the management interface itself. Following is a demonstration on how it can be configured:

5.5.1 Web Management

CREATE SETTINGS FOR OTHER MANAGEMENT
OPTIONS

VoIP PBX Gateway

HOME	SYSTEM	TCP/IP	CHANNEL	INTERFACE	UPGRADE	MAP&HELP
<div style="text-align: right;"> <input type="button" value="Apply"/> <input type="button" value="Revert"/> </div>						
						
Programming via RS232 Console Port						
Session Timeout		<input type="text" value="5"/> minute(s) (0~255)				
Password Threshold		<input type="text" value="1"/> times (1~255)				
Silent Time		<input type="text" value="0"/> minute(s) (0~255)				
Baud Rate		<input type="text" value="9600"/> bits/second				
Data Bits		<input type="text" value="8"/> bits				
Stop Bits		<input type="text" value="1"/> bit(s)				
Parity Setting		<input type="text" value="None"/>				
Programming via an Analog Phone						
Access Code		<input type="text" value="##"/>				
Password		<input type="text"/>				
Web Authentication						


ALL RIGHTS RESERVED

Category	Entry	Description	Data Type	Range
Console Setting	Session Timeout	A session (system console or Telnet) will be automatically logged-out if the activity timer has exceeded the maximum timeout value. The value 0 stands for no timeout.	RW	0 – 255 minutes
	Password Threshold	The session will be halted if the number of invalid password tries has reached the threshold. Please note that it applies to the console and Telnet only, it does not apply to the web interface. The value of 0 stands for no password threshold.	RW	0 – 255
	Silent Time	Determines how long the console will halt when the invalid password tries has reached the threshold.	RW	0 – 255 minutes
	Baud Rate	System console baud rate selection. If the baud rate is set to any rate other than 9600 you will see a string of garble in the terminal during system boot up. The console goes back to normal after boot up. This is because the system is set at 9600, 8, 1, N during boot up. Therefore it is highly recommended to configure the system console to 9600 baud.	RW	2400, 9600 , 19200, 38400
	Data Bits	Data bits selection	RW	7, 8 bits
	Stop Bits	Stop bits selection	RW	1 , 2 bits
Phone Set Programming	Access Code	The Access Code to start Phone Set Programming Mode (see 6 Appendix A - Phone Set Interface Configuration Procedures for more detail information)	RW	## as default, 1-6 digits, the first digit can be "#" or "*"
	Password	The password required to enter into the Phone Set Programming Mode after entering the Access Code	RW	0000 as default, 1-4 digits
Web Authentication	User Name	The Authentication ID to begin the Web Management Interface. The Read & Write account can read and write information via Web browser. The Read only account can read information only.	RW	WEB as default for Read and Write, BLANK for read only 1-12 characters in string format

Category	Entry	Description	Data Type	Range
	Password	The Password for the Authentication ID to begin the Web Management Interface	WO	Empty password as default, Allow string up to 6 characters
	Confirm Password	Re-enter the Password for the Authentication ID to confirm enter into the Web Management Interface	WO	Empty password as default, Allow string up to 6 characters

WEB AUTHENTICATION

VoIP PBX Gateway

HOME		SYSTEM		TCP/IP		CHANNEL		INTERFACE		UPGRADE		MAP&HELP			
												Apply		Revert	
Web Password Security															
Web Authentication (Read & Write)															
User Name				<input type="text" value="WEB"/>											
Password				<input type="password"/>											
Confirm Password				<input type="password"/>											
Web Authentication (Read Only)															
User Name				<input type="text"/>											
Password				<input type="password"/>											
Confirm Password				<input type="password"/>											

ALL RIGHTS RESERVED

5.5.2 Console Commands

Category	Entry	Console Mode	Console Command
Line Console	Session Timeout	Console	time-out <0-255> in minutes
	Databits	Console	databits <7/8>
	Password Threshold	Console	password-thresh <0-255>
	Silent Time	Console	silent-time <0-255> in minutes
	Baud Rate	Console	speed <2400 9600 19200 38400 >
	Time Out	Console	time-out <0-255> in minutes
Password	Console Level	Configuration	password console level <1-15> <password> in 6 characters for "enable"
	Phone	Configuration	password phone digits in 4 digits (0~9, default is 0000)
	Web	Configuration	password web username <username> in 6 characters
		Configuration	password web password <password> in 6 characters

5.6 Software Upgrade


The software upgrade can only be done through a TFTP server, so you must have a TFTP server running on the network and the new firmware must be saved on the server. You can issue a command to download it from the web management page or system console. The following steps are a guide to downloading the new firmware from the TFTP server through a web interface.

- Step 1. Make sure the TFTP server is running and the newly received firmware is saved on the server.
- Step 2. Fill in the IP address of the TFTP server and the path/filename information.
- Step 3. Check the *Begin Download* box
- Step 4. Click the *Apply* button to start downloading the firmware. The gateway will display a page with the download status showing: **in-progress**
- Step 5. You can check the download status by manually clicking the *Apply* button repeatedly and holding until the return page shows a successful download. If the gateway cannot find the TFTP server or the filename, the download status in the returned page will show **Time-out** or **Error**.
- Step 6. After the code has been successfully downloaded, you have to initiate a cold-start. The new code will not take effect until you issue a cold-start command. You can issue a cold-start command through the system console or through the web management page in the System Management.

UPGRADE

VoIP PBX Gateway

HOME	SYSTEM	TCP/IP	CHANNEL	INTERFACE	UPGRADE	MAP&HELP
------	--------	--------	---------	-----------	---------	----------



Firmware

Version: 1.01

TFTP Server

IP Address:

Download Path/File Name

☐ **Start Downloading**

Download Status : Idle

Note!! You MUST initiate a **Cold Reboot** of your gateway to complete the download process and upload the new firmware into the gateway.

ALL RIGHTS RESERVED

Category	Entry	Description	Data Type	Range
Firmware	Version	Displays the firmware version	RO	
TFTP Server	IP Address	Specifies the IP address of the TFTP server. A domain name is also allowed.	RW	IP address and domain name
	Download Path/File Name	Specifies the path of the filename in the TFTP server such as: C:/runtime.tcw	RW	
	Start Downloading	A check out box to enable the system to begin downloading. When checked and apply is clicked, the system will commence downloading.	RW	

5.6.1 Console Commands

Using the system console to upgrade the firmware is quite similar to using the Web management interface. You must run the TFTP server first. You must also assign the IP address of the TFTP server and filename separately. After they are configured, issue a copy command to initiate the firmware upgrade. You can also combine three commands in one. Following these steps:

Step 1: Configure TFTP server and filename

a) Separate command:

1. **tftp server** *<ip-address | domain name>*
2. **tftp filename** *<filename>*
3. **copy tftp:///**

b) Combined command

```
copy tftp://<ip-address>/<filename>
```

```
ITG3#copy tftp://192.168.0.201/a:\runtime.tcw
TFTP Server: 192.168.0.201
a:\runtime.tcw
Downloading....
```

Step 2: Gateway is downloading the firmware. Wait for the result.

```
ITG3#copy tftp://192.168.0.201/a:\runtime.tcw
TFTP Server: 192.168.0.201
a:\runtime.tcw
Downloading....
Download success
System must reload
```

Step 3: If the gateway download successfully, make a cold-start to launch the new code.

```
ITG3#reload
```

Category	Entry	Console Mode	Console Command
TFTP Server	IP Address	Configuration	<code>tftp server <ip-address> / <domain name></code>
	Download Path/File Name	Configuration	<code>tftp filename <filename></code>
	Start Downloading	Privileged	<p>Two commands: If the TFTP server IP address and filename have been assigned:</p> <pre>copy tftp :///</pre> <p>Or specify the address and file name at the same time:</p> <pre>copy tftp ://<ip-address>/<filename></pre> <p>If the TFTP server IP address and filename have been assigned:</p> <p>If the TFTP servers IP has not been assigned You may specify the address and file name simultaneously:</p>

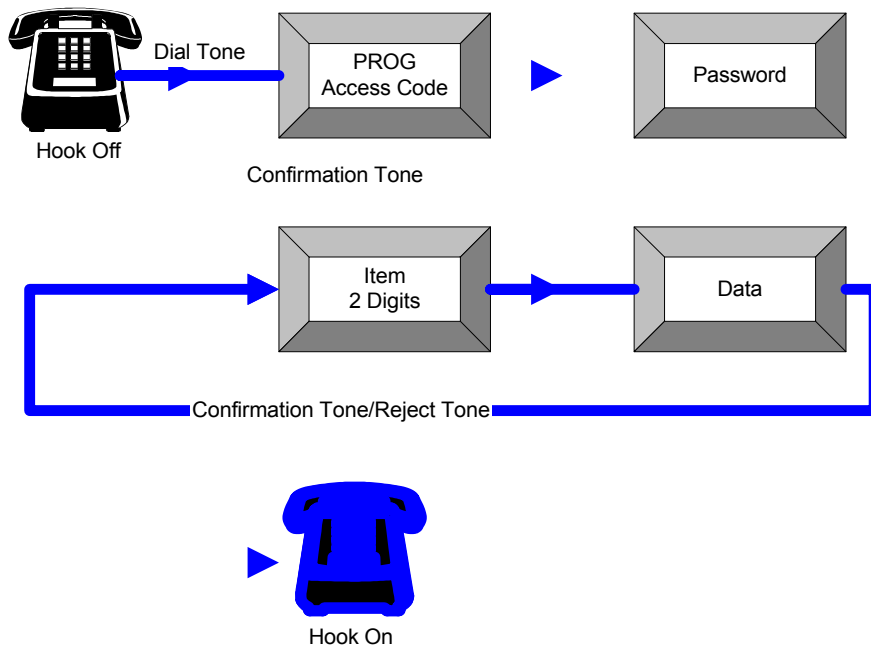
5.7 Additional Console Commands

Comands	Purpose
area	Set the device area code
auto_attn	Set auto attendant status
call_route	Set or delete an entry of routing table
code	Enter access code configuration mode
country	Set the device country code
dbflush	Immediately saves the current configuration onto non-volatile memory. It is recommended that you issue this command after entering configuration changes. The system will automatically execute this command if it has detected no input within a certain time frame.
delete nvram	Resets the configuration to the default value. Also known as a Factory Reset. delete nvram
dial_code	Set the access number for out-bound analysis
exit	To exit current mode and go back to upper level
end	Go back to Privilege mode
extension_len	Set the number of digits for PBX extension
gid_tmr	Timer to erase group id when system power down
group_id	Set the group id
master_ip	Set master's IP address
internal_ac	Set the internal access code for entra-gateway calls
intn_code	Set the international access code for in-bound analysis
local_pstn_ac	Set the local PSTN trunk access code, if exists
long_distance	Set the long distance access code for in-bound analysis
pin	Set or delete a pin code
prefix	Set the device prefix number
prog_ac	Set the device phone set program mode access code
region_id	Set the region_id information for proper ringing pattern, cadence and other regional related profile.
rtp_base	Set the RTP base port number
service_port	Set the Service port for Telnet or Web
show ac_summary	Show summary of access code configuration
show call_route	Show the device routing table
show channel	Shows the channel summary
show date	Shows date
show ethernet	Shows Ethernet information
show flash	Shows flash time settings
show history	Shows the commands that was issued
show ip	Shows IP settings
show line	Shows console settings
show location	Shows location information
show pin	Show all pin codes the device all of call password
show routing-config	Show the device current operating routing mode configuration
show running-config	Shows current running configuration
show slave	Show slave device if the device is master
show tftp	Shows TFTP server IP address
show time	Shows current time
show version	Shows firmware version

slave	Set or delete a slave device
transit_ac	Set the transit access code
transit_call	Enable or disable the device transit call
udp_port	Set UDP port number

6 Appendix A - Phone Set Interface Configuration Procedures

6.1 Configuration procedures



Note 11 Press "#" as ending prompt for data entry.

Note 12 The factory default value PROG Access Code is "##" and the default password "0000".

Note 13 The default confirmation tone is "doo...doo...doo"

6.2 Configurable Items

6.2.1 Data Range

Syntax for the data descriptions:

In the Phone Set Programming Mode, all the data are combinations of the 12-keypad on the phone set panel.

1	2	3
4	5	6
7	8	9
*	0	#

x or $0|1|2|3|4|5|6|7|8|9$: digit that range from 0 to 9

** : Keypad **

$^{\#}$: Keypad $^{\#}$

$f(0 \sim 9)$: Digit that range from 0 to 9

$f(0 \sim 9, *, \#)$: String that with digit character that range from 0 to 9 or character $*$ and character $\#$.

$xf(0 \sim 9)$: x number of digit with digit that range from 0 to 9. For example, $4f(0 \sim 9)$ means a four digits number like 0000, 1111, 1234, 9999 and etc.

$[x_1, x_2]f(0 \sim 9)$: Number of x_1 to x_2 digits and the range of the digit is from 0 to 9. Example, $[1, 2]f(1 \sim 9)$ means a number of one or two digits and the digits are between 1 to 9, like 12, 22, 34, 1, 2 and etc. But not include 01, 02, 10, 20 and etc.

$+$: Compound operator, means combine more than one definition into a string or number.

Example, $f(0 \sim 9, *, \#) + [1, 5]f(0, 9)$ means that this is a string that have at least one character with range $f(0 \sim 9, *, \#)$ and then 1 to 5 digits as the compound result.

6.2.2 Configurable Items

Code	Description	Data after item code
01	DHCP Status	0 : Disable ; 1: Enable
02	IP Address	$xxx, ^{*}, xxx, ^{*}, xxx, ^{*}, xxx$
03	Subnet Mask	$xxx, ^{*}, xxx, ^{*}, xxx, ^{*}, xxx$
04	Default Gateway	$xxx, ^{*}, xxx, ^{*}, xxx, ^{*}, xxx$
05	Group ID	$[1, 10]f(0 \sim 9)$, the number is between 0 to 2147483647.
06	Master IP Address	$xxx, ^{*}, xxx, ^{*}, xxx, ^{*}, xxx$; 0.0.0.0 if this gateway is the master, and it is the default value.
07	Country Code	$[1, 3]f(0, 9)$
08	Area Code	$[1, 3]f(0, 9)$
09	Prefix Code	$[1, 4]f(0, 9)$
10	Add An Inbound International Access Code	$[1, 3]f(0, 9)$
11	Delete An Inbound International Access Code	$[1, 3]f(0, 9)$
12	Outbound International Access Code	$[1, 3]f(0, 9)$
13	Long Distance Access Code	$[1, 3]f(0, 9)$
14	Internal Call Access Code	$1f(0 \sim 9, *, \#) + [1, 5]f(0 \sim 9)$
15	Transit Call Access Code	$1f(0 \sim 9, *, \#) + [1, 5]f(0 \sim 9)$
16	Program Mode Access Code	$1f(0 \sim 9, *, \#) + [1, 5]f(0 \sim 9)$
17	Set Local PSTN Access Code	$1f(0 \sim 9, *, \#) + [1, 5]f(0 \sim 9)$
18	Delete Local PSTN Access Code	$1f(0 \sim 9, *, \#) + [1, 5]f(0 \sim 9)$
19	VoIP Trunk Access Code	$1f(0 \sim 9, *, \#) + [1, 5]f(0 \sim 9)$
20	Add An Routing Entry	$[1, 6]f(0 \sim 9, *, \#) + ^{*} + [1, 2]f(0 \sim 9)$; (as Entry * Cost)
21	Delete An Routing Entry	$[1, 6]f(0 \sim 9, *, \#)$

22	Add A Member	6f(0~9,*1,*2,*3,*4), which are the last 6 characters of the MAC address and *1,*2,*3,*4,*5,*6 means A, B, C, D, E, F in hexadecimal
23	Delete A Member	6f(0~9,*1,*2,*3,*4), which are the last 6 characters of the MAC address and *1,*2,*3,*4,*5,*6 means A, B, C, D, E, F in hexadecimal
24	Transit Call Status	0 : Disable ; 1: Enable
25	Add A PIN Code	[1,8]f(0~9)
26	Delete A PIN Code	[1,8]f(0~9)
27	Auto. Attendant Status	0 : Not Provided ; 1: Provided
28	PBX Extension Digit Length	1f(1~9)
29	Greeting Status	0 : Default ; 1: Recording
30	Skip Auto Attendant Access Code	1f(0~9,*,#)+[1,5]f(0~9)
97	Password Change	4f(0~9)
98	System Restart	1: Enable

7 Appendix A - Firewall Configuration

The PBX voice gateway uses UDP packets to transmit the call control signaling between devices, and its also utilizing the normal RTP packets to transmit the voice streams. This allows communication to continue even if the PBX gateway is installed behind the firewall. The network administrator needs to open the required port numbers and allow related protocols to pass through the firewall. The factory default value for the required protocols and port number are as follow:

Item	Protocol	Port Numbers	Re-configurable
Signaling	UDP	2000	From WEB, Console
Voice Streams	RTP(UDP)	4000~4031	From WEB, Console
Telnet	TCP	23	From Console
WEB Server	TCP	80	From Console

Table 7-1 The required port numbers for PBX voice gateway

Signaling: For out-of-band call control signaling.

Voice Streams: For voice packets.

Telnet: For remote control.

Web Server: For remote control.

On some of the firewall systems, it is not allowed to use certain range of port numbers or will not use well-known ports to increase security. In this case, users may need to change the default port numbers to make the PBX gateway work. Such modifications can be done through Web/Console Management Interfaces (refer to [System]->[Configuration] in Web or [Routing] configuration in Console). After the modification, the system needs to be warm started to make the new value take effective. Such modifications must be done on each device that joins the same routing group. It means, they must use the same range of port numbers in order to communicate with each other.

8 Appendix B - Regulation Compliance Information & Warranty

8.1 FCC

FCC Class A

This Equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Warning:

- A shielded-type power cord is required in order to meet FCC emission limits and also to prevent interference to the nearby radio and television reception.
- You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.
- The RJ-45 connectors that marked "To LAN" and "To WAN" on the front panel are used for data access only.
- The RJ-11 Connectors on the rear panel are designed to connected to analog phones or analog trunks to PBAX, they are not intended for connection to external TNV Communication Network(PSTN).

8.2

8.3

Warranty

SMC's Limited Warranty

Limited Warranty Statement: SMC Networks, Inc. ("SMC") warrants its products to be free from defects in workmanship and materials, under normal use and service, for the applicable warranty term. All SMC products carry a standard 90-day limited warranty from the date of purchase from SMC or its Authorized Reseller. SMC may, at its own discretion, repair or replace any product not operating as warranted with a similar or functionally equivalent product, during the applicable warranty term. SMC will endeavor to repair or replace any product returned under warranty within 30 days of receipt of the product.

The standard limited warranty can be upgraded to a Limited Lifetime* warranty by registering new products within 30 days of purchase from SMC or its Authorized Reseller. Registration can be accomplished via the enclosed product registration card or online via the SMC web site. Failure to register will not affect the standard limited warranty. The Limited Lifetime warranty covers a product during the Life of that Product, which is defined as the period of time during which the product is an 'Active' SMC product. A product is considered to be 'Active' while it is listed on the current SMC price list. As new technologies emerge, older technologies become obsolete and SMC will, at its discretion, replace an older product in its product line with one that incorporates these newer technologies. At that point, the obsolete product is discontinued and is no longer an 'Active' SMC product. A list of discontinued products with their respective dates of discontinuance can be found at http://www.smc.com/smc/pages_html/support.html.

All products that are replaced become the property of SMC. Replacement products may be either new or reconditioned. Any replaced or repaired product carries either a 30-day limited warranty or the remainder of the initial warranty, whichever is longer. SMC is not responsible for any custom software or firmware, configuration information, or memory data of Customer contained in, stored on, or integrated with any products returned to SMC pursuant to any warranty. Products returned to SMC should have any customer-installed accessory or add-on components, such as expansion modules, removed prior to returning the product for replacement. SMC is not responsible for these items if they are returned with the product.

Customers must contact SMC for a Return Material Authorization number prior to returning any product to SMC. Proof of purchase may be required. Any product returned to SMC without a valid Return Material Authorization (RMA) number clearly marked on the outside of the package will be returned to customer at customer's expense. For warranty claims within North America, please call our toll-free customer support number at (800) 762-4968. Customers are responsible for all shipping charges from their facility to SMC. SMC is responsible for return shipping charges from SMC to customer.

WARRANTIES EXCLUSIVE: IF AN SMC PRODUCT DOES NOT OPERATE AS WARRANTED ABOVE, CUSTOMER'S SOLE REMEDY SHALL BE REPAIR OR REPLACEMENT OF THE PRODUCT IN QUESTION, AT SMC'S OPTION. THE FOREGOING WARRANTIES AND REMEDIES ARE EXCLUSIVE AND ARE IN LIEU OF ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, EITHER IN FACT OR BY OPERATION OF LAW, STATUTORY OR OTHERWISE, INCLUDING WARRANTIES OR CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. SMC NEITHER ASSUMES NOR AUTHORIZES ANY OTHER PERSON TO ASSUME FOR IT ANY OTHER LIABILITY IN CONNECTION WITH THE SALE, INSTALLATION, MAINTENANCE OR USE OF ITS PRODUCTS. SMC SHALL NOT BE LIABLE UNDER THIS WARRANTY IF ITS TESTING AND EXAMINATION DISCLOSE THE ALLEGED DEFECT IN THE PRODUCT DOES NOT EXIST OR WAS CAUSED BY CUSTOMER'S OR ANY THIRD PERSON'S MISUSE, NEGLIGENCE, IMPROPER INSTALLATION OR TESTING, UNAUTHORIZED ATTEMPTS TO REPAIR, OR ANY OTHER CAUSE BEYOND THE RANGE OF THE INTENDED USE, OR BY ACCIDENT, FIRE, LIGHTNING, OR OTHER HAZARD.

LIMITATION OF LIABILITY: IN NO EVENT, WHETHER BASED IN CONTRACT OR TORT (INCLUDING NEGLIGENCE), SHALL SMC BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL, INDIRECT, SPECIAL,

OR PUNITIVE DAMAGES OF ANY KIND, OR FOR LOSS OF REVENUE, LOSS OF BUSINESS, OR OTHER FINANCIAL LOSS ARISING OUT OF OR IN CONNECTION WITH THE SALE, INSTALLATION, MAINTENANCE, USE, PERFORMANCE, FAILURE, OR INTERRUPTION OF ITS PRODUCTS, EVEN IF SMC OR ITS AUTHORIZED RESELLER HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

SOME STATES DO NOT ALLOW THE EXCLUSION OF IMPLIED WARRANTIES OR THE LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR CONSUMER PRODUCTS, SO THE ABOVE LIMITATIONS AND EXCLUSIONS MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, WHICH MAY VARY FROM STATE TO STATE. NOTHING IN THIS WARRANTY SHALL BE TAKEN TO AFFECT YOUR STATUTORY RIGHTS.

* SMC will provide warranty service for one year following discontinuance from the active SMC price list. Under the limited lifetime warranty, internal and external power supplies, fans, and cables are covered by a standard one-year warranty from date of purchase.

9 Regional Tone adjustment

For most of the countries, the tone specifications are not the same. The differences especially happen on the definition for Dial Tone, Ring Back Tone, Busy Tone and Reorder Tone. In order to make the PBX gateway able to be installed in different countries, the device administrator can change the regional_id according to country that his device is installed. If he/she specify the different regional ID, the ring, cadence and frequency that sending out or detect my the PBX voice gateway will adjust too.

The command to change the regional_id is doable under Console or Telnet by CLI.

```
PBX Gateway>enable
```

```
PBX Gateway#config
```

Enter configuration commands, one per line. End with CNTL/Z

```
PBX Gateway(config)#regional_id ?
```

<0-99> Set the value for regional id

```
PBX Gateway(config)#regional_id 2
```

```
PBX Gateway(config)#exit
```

```
PBX Gateway#delete nvram ?
```

all Select the function to delete NVRAM

keep_ip Select the function to delete NVRAM

<cr>

```
PBX Gateway#delete nvram keep_ip
```

(The command "delete nvram keep_ip" is functioning as factory reset by will keep the IP address configuration for this device and the regional_id, after doing this, you should re-configure the device again).

The default value is "00" for regional_id, but it may equivalent to some of the regional_id below. This depends on which regional_id will be take as default value.

Regional_id	Country
06	Canada
07	China
12	France
15	Hong Kong
22	Italy
23	Japan
38	Slovenia
40	Spain
43	Taiwan
46	Great Britain
47	United States

Table 9-1 The table of regional ID and it representative country

FOR TECHNICAL SUPPORT, CALL:

From U.S.A. and Canada (24 hours, 7 days a week)

(800)SMC-4-YOU; (949)707-2400; (949)707-2460 (Fax)

From Europe (8:00 AM - 5:30 PM UK Greenwich Mean Time)

44 (0)1188 748740; 44 (0)1189 748741 (Fax)

INTERNET

E-mail address:

techsupport@smc.com

european.techsupport@smc-europe.com

Driver updates:

<http://www.smc.com/support.html>

World Wide Web:

<http://www.smc.com/>

FTP Site:

<ftp.smc.com>

FOR LITERATURE OR ADVERTISING RESPONSE, CALL:

U.S.A. and Canada: (800)SMC-4-YOU; Fax (949)707-2460

Spain : 34-93-477-4920; Fax 34-93-477-3774

UK: 44 (0)1188 748700; Fax 44 (0)1189 748701

Southern Europe: 33 (1)41.18.68.68; Fax 33 (1)41.18.68.69

Central/Eastern Europe: 49 (0)89 92861-200; Fax 49 (0)89 92861-230

Nordic: 46 (8)564 33145; Fax 46 (8)87 62 62

Middle East: 971-48818410; Fax 971-48817993

South Africa: 27 (0)11-3936491; Fax 27 (0)11-3936491

PRC: 86-10-6235-4958; Fax 86-10-6235-4962

Taiwan: 886-2-2747-4780; Fax 886-2-2747-9220

Asia Pacific: (65)238 6556; Fax (65)238 6466

Korea: 82-2-553-0860; Fax 82-2-553-7202

Japan: 81-45-224-2332; Fax 81-45-224-2331

Australia: 61-2-9416-0437; Fax 61-2-9416-0474

India: 91-22-8204437; Fax 91-22-8204443



6 Hughes, Model Number: SMC-VIP04/SMC-VIP08
Irvine, CA 92618 Publication Number: 61200000080A V1.00